Figure 1: Human POSH Coding Sequence (SEQ ID NO:1) (part 1)

ATGGATGAATCAGCCTTGTTGGATCTTTTGGAGTGTCCGGTGTGTCTAGAGCGCCTTGATGCTTCTGCGA
AGGTCTTGCCTTGCCAGCATACGTTTTGCAAGCGATGTTTGCTGGGGATCGTAGGTTCTCGAAATGAACT
CAGATGTCCCGAGTGCAGGACTCTTGTTGGCTCGGGTGTCGAGGAGCTTCCCAGTAACATCTTGCTGGTC
AGACTTCTGGATGGCATCAAACAGAGGCCTTGGAAACCTGGTCCTGGTGGGGGAAGTGGGACCAACTGCA
CAAATGCATTAAGGTCTCAGAGCAGCACTGTGGCTAATTGTAGCTCAAAAGATCTGCAGAGCTCCCAGGG
CGGACAGCAGCCTCGGGTGCAATCCTGGAGCCCCCCAGTGAGGGGTATACCTCAGTTACCATGTGCCAAA
GCGTTATACAACTATGAAGGAAAAGAGCCTGGAGACCTTAAATTCAGCAAAGGCGACATCATCATTTTGC
GAAGACAAGTGGATGAAAATTGGTACCATGGGGAAGTCAATGGAATCCATGGCTTTTTCCCCACCAACTT
TGTGCAGATTATTAAACCGTTACCTCAGCCCCCACCTCAGTGCAAAGCACTTTATGACTTTGAAGTGAAA
GACAAGGAAGCAGACAAAGATTGCCTTCCATTTGCAAAGGATGATGTTCTGACTGTGATCCGAAGAGTGG
ATGAAAACTGGGCTGAAGGAATGCTGGCAGACAAAATAGGAATATTTCCAATTTCATATGTTGAGTTTAA
CTCGGCTGCTAAGCAGCTGATAGAATGGGATAAGCCTCCTGTGCCAGGAGTTGATGCTGGAGAATGTTCC
TCGGCAGCAGCCCAGAGCAGCACTGCCCCAAAGCACTCCGACACCAAGAAGAACACCAAAAAGCGGCACT
CCTTCACTTCCCTCACTATGGCCAACAAGTCCTCCCAGGCATCCCAGAACCGCCACTCCATGGAGATCAG
CCCCCCTGTCCTCATCAGCTCCAGCAACCCCACTGCTGCTGCACGGATCAGCGAGCTGTCTGGGCTCTCC
TGCAGTGCCCCTTCTCAGGTTCATATAAGTACCACCGGGTTAATTGTGACCCCGCCCCCAAGCAGCCCAG
TGACAACTGGCCCCTCGTTTACTTTCCCATCAGATGTTCCCTACCAAGCTGCCCTTGGAACTTTGAATCC
TCCTCTTCCACCACCCCCTCTCCTGGCTGCCACTGTCCTTGCCTCCACACCACCAGGCGCCACCGCCGCC
GCTGCTGCTGCTGGAATGGGACCGAGGCCCATGGCAGGATCCACTGACCAGATTGCACATTTACGGCCGC
AGACTCGCCCCAGTGTGTATGTTGCTATATATCCATACACTCCTCGGAAAGAGGATGAACTAGAGCTGAG
AAAAGGGGAGATGTTTTTAGTGTTTGAGCGCTGCCAGGATGGCTGGTTCAAAGGGACATCCATGCATACC
AGCAAGATAGGGGTTTTCCCTGGCAATTATGTGGCACCAGTCACAAGGGCGGTGACAAATGCTTCCCAAG
CTAAAGTCCCTATGTCTACAGCTGGCCAGACAAGTCGGGGAGTGACCATGGTCAGTCCTTCCACGGCAGG
AGGGCCTGCCCAGAAGCTCCAGGGAAATGGCGTGGCTGGGAGTCCCAGTGTTGTCCCCGCAGCTGTGGTA
TCAGCAGCTCACATCCAGACAAGTCCTCAGGCTAAGGTCTTGTTGCACATGACGGGGCAAATGACAGTCA
ACCAGGCCCGCAATGCTGTGAGGACAGTTGCAGCGCACAACCAGGAACGCCCCACGGCAGCAGTGACACC
CATCCAGGTACAGAATGCCGCCGGCCTCAGCCCTGCATCTGTGGGCCTGTCCCATCACTCGCTGGCCTCC
CCACAACCTGCGCCTCTGATGCCAGGCTCAGCCACGCACACTGCTGCCATCAGTATCAGTCGAGCCAGTG
CCCCTCTGGCCTGTGCAGCAGCTGCTCCACTGACTTCCCCAAGCATCACCAGTGCTTCTCTGGAGGCTGA
GCCCAGTGGCCGGATAGTGACCGTTCTCCCTGGACTCCCCACATCTCCTGACAGTGCTTCATCAGCTTGT
GGGAACAGTTCAGCAACCAAACCAGACAAGGATAGCAAAAAAGAAAAAAAGGGTTTGTTGAAGTTGCTTT
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CAGTGCAGAGCTTCCTCTCCAGGGAGCGGTGGGGCCCGAACTGCCACCAGGAGGTGGCCATGGCAGGGCA
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ATGGCTGGTTCAAAGGCACATTACAACGTAATGGGAAAACTGGCCTTTTCCCAGGAAGCTTTGTGGAAAA
CATATGA

Figure 2: Human POSH Amino Acid Sequence (SEQ ID NO:2) (part 2)

MDESALLDLLECPVCLERLDASAKVLPCQHTFCKRCLLGIVGSRNELRCPECRTLVGSGVEELPSNILLV
RLLDGIKQRPWKPGPGGGSGTNCTNALRSQSSTVANCSSKDLQSSQGGQQPRVQSWSPPVRGIPQLPCAK
ALYNYEGKEPGDLKFSKGDIIILRRQVDENWYHGEVNGIHGFFPTNFVQIIKPLPQPPPQCKALYDFEVK
DKEADKDCLPFAKDDVLTVIRRVDENWAEGMLADKIGIFPISYVEFNSAAKQLIEWDKPPVPGVDAGECS
SAAAQSSTAPKHSDTKKNTKKRHSFTSLTMANKSSQASQNRHSMEISPPVLISSSNPTAAARISELSGLS
CSAPSQVHISTTGLIVTPPPSSPVTTGPSFTFPSDVPYQAALGTLNPPLPPPPLLAATVLASTPPGATAA
AAAAGMGPRPMAGSTDQIAHLRPQTRPSVYVAIYPYTPRKEDELELRKGEMFLVFERCQDGWFKGTSMHT
SKIGVFPGNYVAPVTRAVTNASQAKVPMSTAGQTSRGVTMVSPSTAGGPAQKLQGNGVAGSPSVVPAAVV
SAAHIQTSPQAKVLLHMTGQMTVNQARNAVRTVAAHNQERPTAAVTPIQVQNAAGLSPASVGLSHHSLAS
PQPAPLMPGSATHTAAISISRASAPLACAAAAPLTSPSITSASLEAEPSGRIVTVLPGLPTSPDSASSAC
GNSSATKPDKDSKKEKKGLLKLLSGASTKRKPRVSPPASPTLEVELGSAELPLQGAVGPELPPGGGHGRA
GSCPVDGDGPVTTAVAGAALAQDAFHRKASSLDSAVPIAPPPRQACSSLGPVLNESRPVVCERHRVVVSY
PPQSEAELELKEGDIVFVHKKREDGWFKGTLQRNGKTGLFPGSFVENI

Figure 3: Human POSH cDNA Sequence (SEQ ID NO:3)

CTGAGAGACACTGCGAGCGGCGAGCGCGGTGGGGCCGCATCTGCATCAGCCGCCGCAGCCGCTGCGGGGC
CGCGAACAAAGAGGAGGAGCCGAGGCGCGAGAGCAAAGTCTGAAATGGATGTTACATGAGTCATTTTAAG
GGATGCACACAACTATGAACATTTCTGAAGATTTTTTCTCAGTAAAGTAGATAAAGATGGATGAATCAGC
CTTGTTGGATCTTTTGGAGTGTCCGGTGTGTCTAGAGCGCCTTGATGCTTCTGCGAAGGTCTTGCCTTGC
CAGCATACGTTTTGCAAGCGATGTTTGCTGGGGATCGTAGGTTCTCGAAATGAACTCAGATGTCCCGAGT
GCAGGACTCTTGTTGGCTCGGGTGTCGAGGAGCTTCCCAGTAACATCTTGCTGGTCAGACTTCTGGATGG
CATCAAACAGAGGCCTTGGAAACCTGGTCCTGGTGGGGGAAGTGGGACCAACTGCACAAATGCATTAAGG
TCTCAGAGCAGCACTGTGGCTAATTGTAGCTCAAAAGATCTGCAGAGCTCCCAGGGCGGACAGCAGCCTC
GGGTGCAATCCTGGAGCCCCCCAGTGAGGGGTATACCTCAGTTACCATGTGCCAAAGCGTTATACAACTA
TGAAGGAAAAGAGCCTGGAGACCTTAAATTCAGCAAAGGCGACATCATCATTTTGCGAAGACAAGTGGAT
GAAAATTGGTACCATGGGGAAGTCAATGGAATCCATGGCTTTTTCCCCACCAACTTTGTGCAGATTATTA
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CAAAGATTGCCTTCCATTTGCAAAGGATGATGTTCTGACTGTGATCCGAAGAGTGGATGAAAACTGGGCT
GAAGGAATGCTGGCAGACAAAATAGGAATATTTCCAATTTCATATGTTGAGTTTAACTCGGCTGCTAAGC
AGCTGATAGAATGGGATAAGCCTCCTGTGCCAGGAGTTGATGCTGGAGAATGTTCCTCGGCAGCAGCCCA
GAGCAGCACTGCCCCAAAGCACTCCGACACCAAGAAGAACACCAAAAAGCGGCACTCCTTCACTTCCCTC
ACTATGGCCAACAAGTCCTCCCAGGCATCCCAGAACCGCCACTCCATGGAGATCAGCCCCCCTGTCCTCA
TCAGCTCCAGCAACCCCACTGCTGCTGCACGGATCAGCGAGCTGTCTGGGCTCTCCTGCAGTGCCCCTTC
TCAGGTTCATATAAGTACCACCGGGTTAATTGTGACCCCGCCCCCAAGCAGCCCAGTGACAACTGGCCCC
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CCCCTCTCCTGGCTGCCACTGTCCTTGCCTCCACACCACCAGGCGCCACCGCCGCCGCTGCTGCTGCTGG
AATGGGACCGAGGCCCATGGCAGGATCCACTGACCAGATTGCACATTTACGGCCGCAGACTCGCCCCAGT
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TTTCCCTGGCAATTATGTGGCACCAGTCACAAGGGCGGTGACAAATGCTTCCCAAGCTAAAGTCCCTATG
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TCTGATGCCAGGCTCAGCCACGCACACTGCTGCCATCAGTATCAGTCGAGCCAGTGCCCCTCTGGCCTGT
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AACCAAACCAGACAAGGATAGCAAAAAAGAAAAAAAGGGTTTGTTGAAGTTGCTTTCTGGCGCCTCCACT
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GGACGGGGACGGACCGGTCACGACTGCAGTGGCAGGAGCAGCCCTGGCCCAGGATGCTTTTCATAGGAAG
GCAAGTTCCCTGGACTCCGCAGTTCCCATCGCTCCACCTCCTCGCCAGGCCTGTTCCTCCCTGGGTCCTG
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GGCACATTACAACGTAATGGGAAAACTGGCCTTTTCCCAGGAAGCTTTGTGGAAAACATATGAGGAGACT
GACACTGAAGAAGCTTAAAATCACTTCACACAACAAAGTAGCACAAAGCAGTTTAACAGAAAGAGCACAT
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CCTTGTACTGTCTGATTTACTACACAGAGAAACTTTTTTTTTTTTTTAAGATATATGACTAAAATGGACA
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TTGGATTATGATTTTAAGAAATTATTAATTTATGAAATGATAGGTAAGGAGAAGCTGGATTATCTCCTGT
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AGTTAGTGATTCCCTCTCTTTCTAGTTTGGTAGGAATCACCCTGAAGACCTAGTCCTCAATTTAATTGTG
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AATGTATTTAGAAATATATTTAGTTTTATAGCAGAAGCAGCTCAATTGTTTGGTTGGAAAGTAGGGGAAA
TTGAAGTTGTAGTCACTGTCTGAGAATGGCTATGAAGCGTCATTTCACATTTTACCCCAACTGACCTGCA
TGCCCAGGACACAAGTAAAACATTTGTGAGATAGTGGTGGTAAGTGATGCACTCGTGTTAAGTCAAAGGC
TATAAGAAACACTGTGAAAAGTTCATATTCATCCATTGTGATTCTTTCCCCACGTCTTGCATGTATTACT
GGATTCCCACAGTAATATAGACTGTGCATGGTGTGTATATTTCATTGCGATTTCCTGTTAAGATGAGTTT
GTACTCAGAATTGACCAATTCAGGAGGTGTAAAAATAAACAGTGTTCTCTTCTCTACCCCAAAGCCACTA

-to be continued

Figure 3: Human POSH cDNA Sequence (SEQ ID NO:3)

CTGACCAAGGTCTCTTCAGTGCACTCGCTCCCTCTCTGGCTAAGGCATGCATTAGCCACTACACAAGTCA
TTAGTGAAAGTGGTCTTTTATGTCCTCCCAGCAGACAGACATCAAGGATGAGTTAACCAGGAGACTACTC
CTGTGACTGTGGAGCTCTGGAAGGCTTGGTGGGAGTGAATTTGCCCACACCTTACAATTGTGGCAGGATC
CAGAAGAGCCTGTCTTTTTATATCCATTCCTTGATGTCATTGGCCTCTCCCACCGATTTCATTACGGTGC
CACGCAGTCATGGATCTGGGTAGTCCGGAAAACAAAAGGAGGGAAGACAGCCTGGTAATGAATAAGATCC
TTACCACAGTTTTCTCATGGGAAATACATAATAAACCCTTTCATCTTTTTTTTTTTCCTTTAAGAATTAA
AACTGGGAAATAGAAACATGAACTGAAAAGTCTTGCAATGACAAGAGGTTTCATGGTCTTAAAAAGATAC
TTTATATGGTTGAAGATGAAATCATTCCTAAATTAACCTTTTTTTTAAAAAAAAACAATGTATATTATGT
TCCTGTGTGTTGAATTTAAAAAAAAAAAATACTTTACTTGGATATTCATGTAATATATAAAGGTTTGGTG
AAATGAACTTTAGTTAGGAAAAAGCTGGCATCAGCTTTCATCTGTGTAAGTTGACACCAATGTGTCATAA
TATTCTTTATTTTGGGAAATTAGTGTATTTTATAAAAATTTTAAAAAGAAAAAAGACTACTACAGGTTAA
GATAATTTTTTTACCTGTCTTTTCTCCATATTTTAAGCTATGTGATTGAAGTACCTCTGTTCATAGTTTC
CTGGTATAAAGTTGGTTAAAATTTCATCTGTTAATAGATCATTAGGTAATATAATGTATGGGTTTTCTAT
TGGTTTTTTGCAGACAGTAGAGGGAGATTTTGTAACAAGGGCTTGTTACACAGTGATATGGTAATGATAA
AATTGCAATTTATCACTCCTTTTCATGTTAATAATTTGAGGACTGGATAAAAGGTTTCAAGATTAAAATT
TGATGTTCAAACCTTTGT

Figure 4: 5' cDNA fragment of human POSH (public gi:10432611; SEQ ID NO:4)

ctgagagacactgcgagcggcgagcgcggtggggccgcatctgcatcagccgccgcagccgctgcggggc
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agtgaccgttctccctggactccccacatctcctgacagtgcttcatcagcttgtgggaacagttcagca
accaaaccagacaaggatagc

Figure 5: N terminus protein fragment of hPOSH (public gi:10432612; SEQ ID NO:5)

MDESALLDLLECPVCLERLDASAKVLPCQHTFCKRCLLGIVGSRNELRCPECRTLVGSGVEELPSNILLV
RLLDGIKQRPWKPGPGGGSGTNCTNALRSQSSTVANCSSKDLQSSQGGQQPRVQSWSPPVRGIPQLPCAK
ALYNYEGKEPGDLKFSKGDIIILRRQVDENWYHGEVNGIHGFFPTNFVQIIKPLPQPPPQCKALYDFEVK
DKEADKDCLPFAKDDVLTVIRRVDENWAEGMLADKIGIFPISYVEFNSAAKQLIEWDKPPVPGVDAGECS
SAAAQSSTAPKHSDTKKNTKKRHSFTSLTMANKSSQASQNRHSMEISPPVLISSSNPTAAARISELSGLS
CSAPSQVHISTTGLIVTPPPSSPVTTGPSFTFPSDVPYQAALGTLNPPLPPPPLLAATVLASTPPGATAA
AAAAGMGPRPMAGSTDQIAHLRPQTRPSVYVAIYPYTPRKEDELELRKGEMFLVFERCQDGWFKGTSMHT
SKIGVFPGNYVAPVTRAVTNASQAKVPMSTAGQTSRGVTMVSPSTAGGPAQKLQGNGVAGSPSVVPAAVV
SAAHIQTSPQAKVLLHMTGQMTVNQARNAVRTVAAHNQERPTAAVTPIQVQNAAGLSPASVGLSHHSLAS
PQPAPLMPGSATHTAAISISRASAPLACAAAAPLTSPSITSASLEAEPSGRIVTVLPGLPTSPDSASSAC
GNSSATKPDKDS

Figure 6: 3' mRNA fragment of hPOSH (public gi:7959248; SEQ ID NO:6)

atttcatatgttgagtttaactcggctgctaagcagctgatagaatgggataagcctcctgtgccaggag
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gctatgtgattgaagtacctctgttcatagtttcctggtataaagttggttaaaatttcatctgttaata
gatcattaggtaatataatgtatgggttttctattggttttttgcagacagtagagggagattttgtaac
aagggcttgttacacagtgatatggtaatgataaaattgcaatttatcactccttttcatgttaataatt
tgaggactggataaaaggtttcaagattaaaatttgatgttcaaacctttgt

Figure 7: C terminus protein fragment of hPOSH (public gi:7959249; SEQ ID NO:7)

ISYVEFNSAAKQLIEWDKPPVPGVDAGECSSAAAQSSTAPKHSDTKKNTKKRHSFTSLTMANKSSQASQN
RHSMEISPPVLISSSNPTAAARISELSGLSCSAPSQVHISTTGLIVTPPPSSPVTTGPSFTFPSDVPYQA
ALGTLNPPLPPPPLLAATVLASTPPGATAAAAAAGMGPRPMAGSTDQIAHLRPQTRPSVYVAIYPYTPRK
EDELELRKGEMFLVFERCQDGWFKGTSMHTSKIGVFPGNYVAPVTRAVTNASQAKVPMSTAGQTSRGVTM
VSPSTAGGPAQKLQGNGVAGSPSVVPAAVVSAAHIQTSPQAKVLLHMTGQMTVNQARNAVRTVAAHNQER
PTAAVTPIQVQNAAGLSPASVGLSHHSLASPQPAPLMPGSATHTAAISISRASAPLACAAAAPLTSPSIT
SASLEAEPSGRIVTVLPGLPTSPDSASSACGNSSATKPDKDSKKEKKGLLKLLSGASTKRKPRVSPPASP
TLEVELGSAELPLQGAVGPELPPGGGHGRAGSCPVDGDGPVTTAVAGAALAQDAFHRKASSLDSAVPIAP
PPRQACSSLGPVLNESRPVVCERHRVVVSYPPQSEAELELKEGDIVFVHKKREDGWFKGTLQRNGKTGLF
PGSFVENI

Figure 8: Human POSH full mRNA, Annotated Sequence (part 2)

TTGTGGACTTCCAGATGGTCAGGAGATGAGCAAAGGATTGGTATGTGACTCTGATGCCCCAGCACAGTTA
CCCCAGCGAGCAGAGTGAAGAAGATGTTTGTGTGGGTTTTGTTAGTCTGGATTCGGATGTATAAGGTGTG
CCTTGTACTGTCTGATTTACTACACAGAGAAACTTTTTTTTTTTTTTAAGATATATGACTAAAATGGACA
ATTGTTTACAAGGCTTAACTAATTTATTTGCTTTTTTAAACTTGAACTTTTCGTATAATAGATACGTTCT
TTGGATTATGATTTTAAGAAATTATTAATTTATGAAATGATAGGTAAGGAGAAGCTGGATTATCTCCTGT
TGAGAGCAAGAGATTCGTTTTGACATAGAGTGAATGCATTTTCCCCTCTCCTCCTCCCTGCTACCATTAT
ATTTTGGGGTTATGTTTTGCTTCTTTAAGATAGAAATCCCAGTTCTCTAATTTGGTTTTCTTCTTTGGGA
AACCAAACATACAAATGAATCAGTATCAATTAGGGCCTGGGGTAGAGAGACAGAAACTTGAGAGAAGAGA
AGTTAGTGATTCCCTCTCTTTCTAGTTTGGTAGGAATCACCCTGAAGACCTAGTCCTCAATTTAATTGTG
TGGGTTTTTAATTTTCCTAGAATGAAGTGACTGAAACAATGAGAAAGAATACAGCACAACCCTTGAACAA
AATGTATTTAGAAATATATTTAGTTTTATAGCAGAAGCAGCTCAATTGTTTGGTTGGAAAGTAGGGGAAA
TTGAAGTTGTAGTCACTGTCTGAGAATGGCTATGAAGCGTCATTTCACATTTTACCCCAACTGACCTGCA
TGCCCAGGACACAAGTAAAACATTTGTGAGATAGTGGTGGTAAGTGATGCACTCGTGTTAAGTCAAAGGC
TATAAGAAACACTGTGAAAAGTTCATATTCATCCATTGTGATTCTTTCCCCACGTCTTGCATGTATTACT
GGATTCCCACAGTAATATAGACTGTGCATGGTGTGTATATTTCATTGCGATTTCCTGTTAAGATGAGTTT
GTACTCAGAATTGACCAATTCAGGAGGTGTAAAAATAAACAGTGTTCTCTTCTCTACCCCAAAGCCACTA
CTGACCAAGGTCTCTTCAGTGCACTCGCTCCCTCTCTGGCTAAGGCATGCATTAGCCACTACACAAGTCA
TTAGTGAAAGTGGTCTTTTATGTCCTCCCAGCAGACAGACATCAAGGATGAGTTAACCAGGAGACTACTC
CTGTGACTGTGGAGCTCTGGAAGGCTTGGTGGGAGTGAATTTGCCCACACCTTACAATTGTGGCAGGATC
CAGAAGAGCCTGTCTTTTTATATCCATTCCTTGATGTCATTGGCCTCTCCCACCGATTTCATTACGGTGC
CACGCAGTCATGGATCTGGGTAGTCCGGAAAACAAAAGGAGGGAAGACAGCCTGGTAATGAATAAGATCC
TTACCACAGTTTTCTCATGGGAAATACATAATAAACCCTTTCATCTTTTTTTTTTTCCTTTAAGAATTAA
AACTGGGAAATAGAAACATGAACTGAAAAGTCTTGCAATGACAAGAGGTTTCATGGTCTTAAAAAGATAC
TTTATATGGTTGAAGATGAAATCATTCCTAAATTAACCTTTTTTTTAAAAAAAAAACAATGTATATTATGT
TCCTGTGTGTTGAATTTAAAAAAAAAAAATACTTTACTTGGATATTCATGTAATATATAAAGGTTTGGTG
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TATTCTTTATTTTGGGAAATTAGTGTATTTTATAAAAATTTTAAAAAGAAAAAAGACTACTACAGGTTAA
GATAATTTTTTTACCTGTCTTTTCTCCATATTTTAAGCTATGTGATTGAAGTACCTCTGTTCATAGTTTC
CTGGTATAAAGTTGGTTAAAATTTCATCTGTTAATAGATCATTAGGTAATATAATGTATGGGTTTTCTAT
TGGTTTTTTGCAGACAGTAGAGGGAGATTTTGTAACAAGGGCTTGTTACACAGTGATATGGTAATGATAA
AATTGCAATTTATCACTCCTTTTCATGTTAATAATTTGAGGACTGGATAAAAGGTTTCAAGATTAAAATT
TGATGTTCAAACCTTTGT

Figure 9: Domain Analysis of Human POSH

Domain Name	begin	end	E-value
RING	12	52	1.06e-08
SH3	137	192	2.76e-19
SH3	199	258	4.84e-15
low complexity	366	384	-
low complexity	390	434	-
SH3	448	505	2.40e-19
low complexity	547	563	-
low complexity	652	668	-
low complexity	705	729	-
SH3	832	888	1.47e-14

Figure 10: Diagram of Human POSH Nucleic Acids

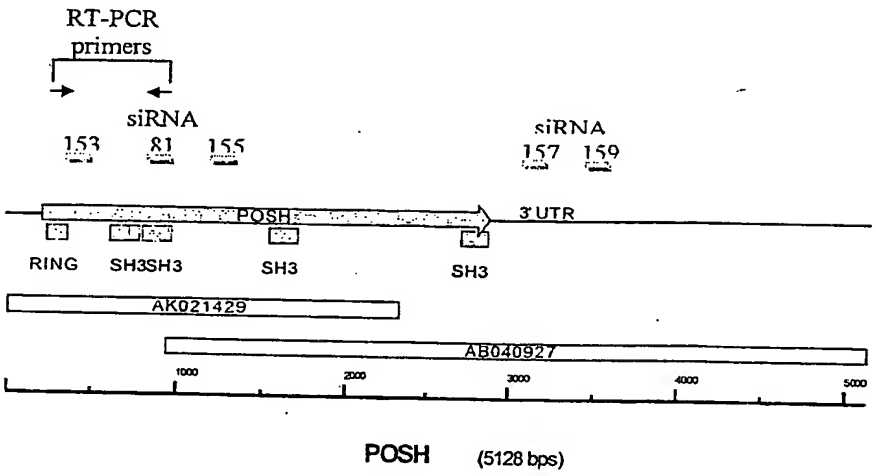


Figure 11: Reduction in Full Length POSH mRNA by siRNA Duplexes

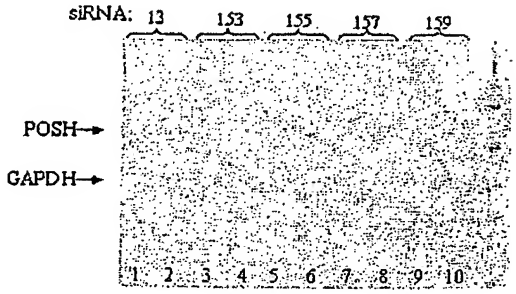


Figure 8: Human POSH full mRNA, Annotated Sequence (part 1)

--L- - gi|10432611|dbj|AK021429.1|AK021429 Homo sapiens cDNA FLJ11367 fis, clone HEMBA1000303, highly similar to Mus musculus Plenty of SH3s (POSH) mRNA

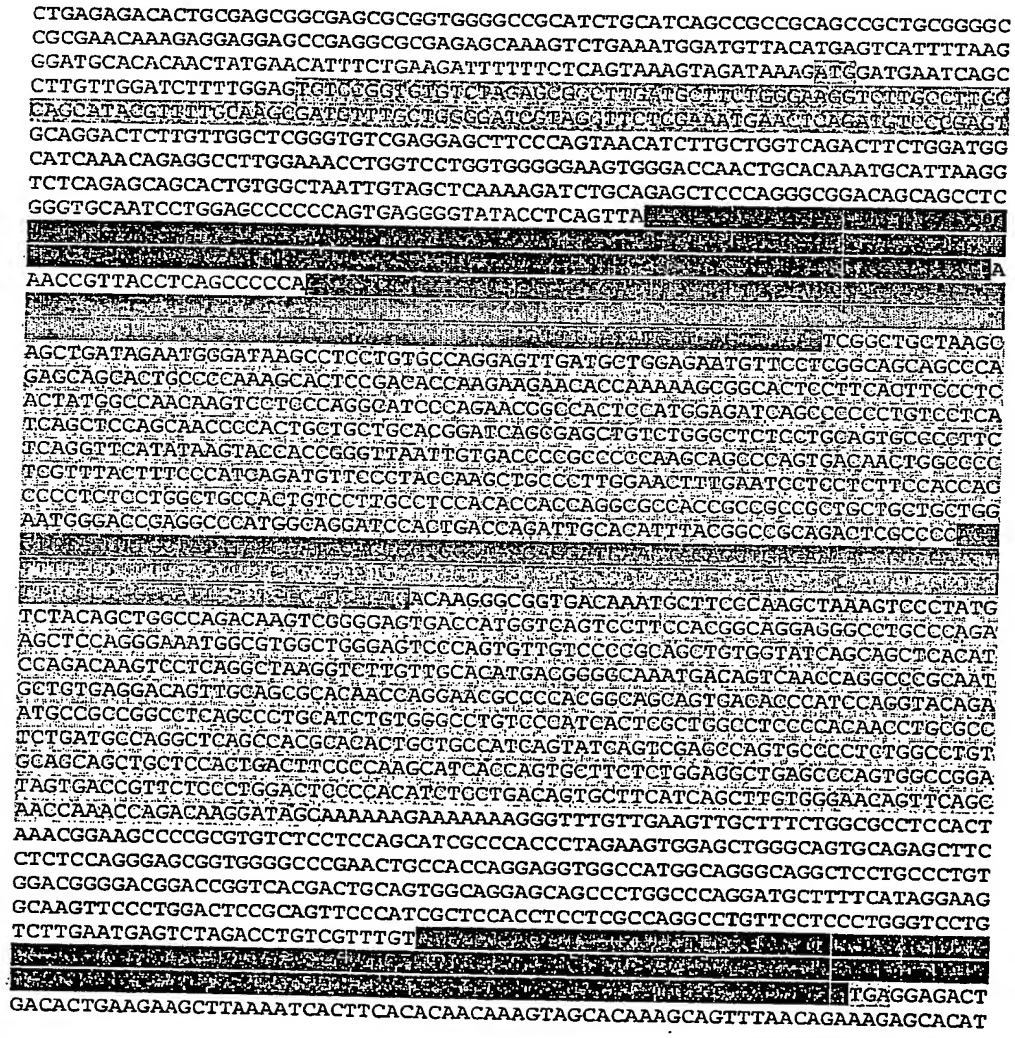
---- - gi|7959248|dbj|AB040927.1|AB040927 Homo sapiens mRNA for KIAA1494 protein, partial cds

- Both hPOSH and KIAA1495

- Ring Domain

- SH3 Domian

- start codon and stop codon of predicted ORF



-to be continued

Figure 12: POSH Affects Release of VLP from Cells

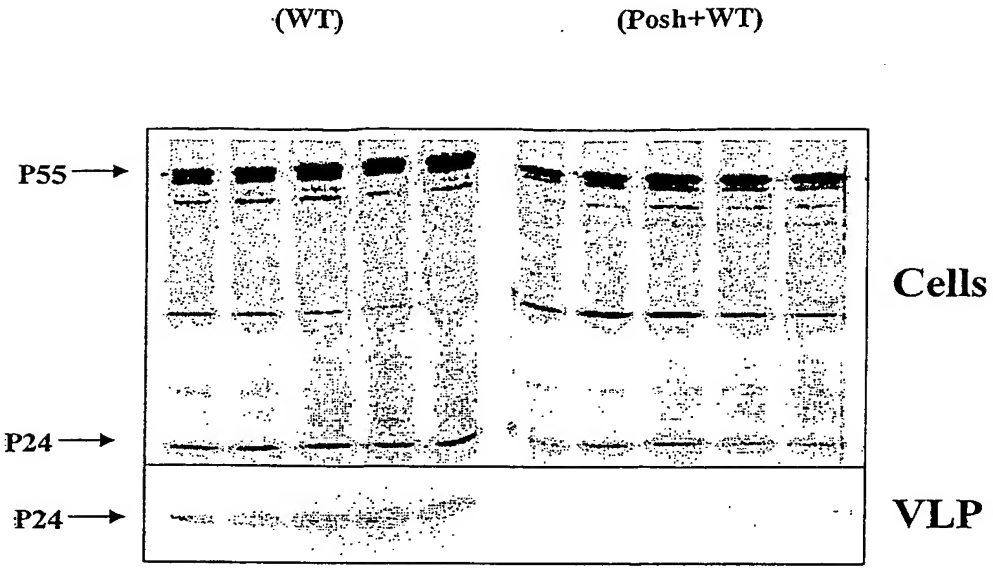


Figure 13: Release of VLP from Cells at Steady State

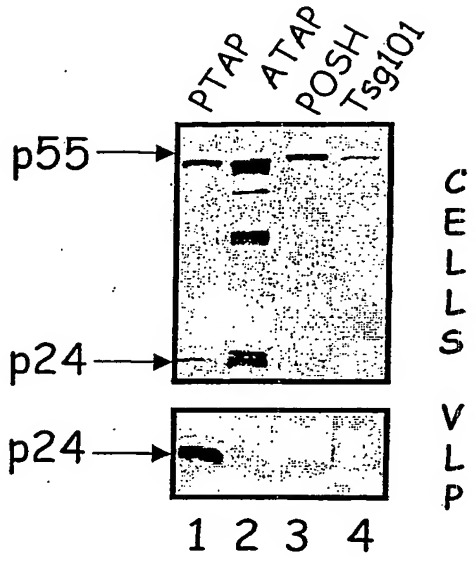


Figure 14: Mouse POSH mRNA sequence (public gi:10946921; SEQ ID NO: 8)

GGGCAGCGGGCTCGGCGGGGCTGCATCTACCAGCGCTGCGGGGCCGCGAACAAAGGCGAGCAGCGGAGGC
GCGAGAGCAAAGTCTGAAATGGATGTTACATGAATCACTTTAAGGGCTGCGCACAACTATGAACGTTCTG
AAGCCGTTTTCTCACTAAAGTCACTCAAGATGGATGAGTCTGCCTTGTTGGACCTTCTGGAGTGCCCTGT
GTGTCTAGAACGCCTGGATGCTTCCGCAAAGGTCTTACCCTGCCAGCATACCTTTTGCAAACGCTGTTTG
CTGGGGATTGTGGGTTCCCGGAATGAACTCAGATGTCCCGAATGCCGGACTCTTGTTGGCTCTGGGGTCG
ACGAGCTCCCCAGTAACATCCTACTGGTCAGACTTCTGGATGGCATCAAGCAGAGGCCTTGGAAACCCGG
CCCTGGTGGGGGCGGCGGGACCACCTGCACAAACACATTAAGGGCGCAGGGCAGCACTGTGGTTAATTGT
GGCTCGAAAGATCTGCAGAGCTCCCAGTGTGGACAGCAGCCTCGGGTGCAAGCCTGGAGCCCCCCAGTGA
GGGGAATACCTCAGTTACCGTGTGCCAAAGCATTATATAACTACGAAGGAAAAGAGCCCGGAGACCTTAA
GTTCAGCAAAGGCGACACCATCATTCTGCGCCGACAGGTGGATGAGAATTGGTACCACGGGGAAGTCAGC
GGGGTCCACGGCTTTTTCCCCACTAACTTCGTGCAGATCATCAAACCTTTACCTCAGCCCCCGCCTCAGT
GCAAAGCACTTTACGACTTTGAAGTGAAAGACAAGGAAGCTGACAAAGATTGCCTTCCCTTCGCAAAGGA
CGACGTACTGACCGTGATCCGCAGAGTGGATGAAAACTGGGCTGAAGGAATGCTGGCAGATAAAATAGGA
ATATTTCCAATTTCATACGTGGAGTTTAACTCAGCTGCCAAGCAGCTGATAGAGTGGGATAAGCCTCCCG
TGCCAGGAGTGGACACGGCAGAATGCCCCTCAGCGACGGCGCAGAGCACCTCTGCCTCAAAGCACCCCGA
CACCAAGAAGAACACCAGGAAGCGACACTCCTTCACCTCCCTCACCATGGCCAACAAGTCTTCCCAGGGG
TCCCAGAACCGCCACTCCATGGAGATCAGCCCTCCTGTGCTCATCAGTTCCAGCAACCCCACAGCCGCAG
CCCGCATCAGCGAACTGTCCGGGCTCTCCTGCAGCGCCCCGTCTCAGGTCCATATAAGCACCACTGGGTT
AATTGTGACCCCACCCCCTAGCAGCCCGGTGACAACTGGCCCTGCGTTCACGTTCCCTTCAGATGTCCCC
TACCAAGCTGCCCTTGGAAGTATGAATCCTCCACTTCCCCCACCCCCTCTCCTGGCGGCCACCGTACTCG
CCTCCACCCCGTCAGGCGCTACTGCTGCTGTTGCTGCTGCTGCCGCCGCCGCCGCTGCTGGAATGGG
ACCCAGGCCTGTGATGGGGTCCTCTGAACAGATTGCACATTTACGGCCTCAGACTCGTCCCAGTGTATAT
GTTGCTATATATCCGTACACTCCCCGGAAGGAAGACGAACTGGAGCTGAGGAAAGGGGAGATGTTTTTGG
TGTTTGAGCGTTGCCAGGACGGCTGGTACAAAGGGACATCGATGCATACCAGCAAGATAGGCGTTTTCCC
TGGCAACTATGTGGCGCCCGTCACAAGGGCGGTGACGAATGCCTCCCAAGCTAAAGTCTCTATGTCTACT
GCGGGTCAGGCAAGTCGCGGGGTGACCATGGTCAGCCCTTCCACTGCAGGAGGACCTACACAGAAGCCCC
AAGGAAACGGCGTGGCCGGAAATCCCAGCGTCGTCCCCACGGCTGTGGTGTCAGCAGCTCATATCCAGAC
AAGTCCTCAGGCTAAGGTCCTGCTGCACATGTCTGGGCAGATGACAGTCAATCAGGCCCGCAATGCTGTG
AGGACAGTTGCAGCACATAGCCAGGAACGCCCCACAGCAGCAGTGACTCCCATCCAGGTCCAGAATGCCG
CCTGCCTTGGTCCTGCATCCGTGGGCCTGCCCCATCATTCTCTGGCCTCCCAACCTCTGCCTCCAATGGC
GGGTCCTGCTGCCCACGGTGCTGCCGTCAGCATCAGTCGAACCAATGCCCCCATGGCCTGCGCTGCAGGG
GCTTCTCTGGCCTCCCCAAATATGACCAGTGCCATGTTGGAGACAGAGCCCAGTGGTCGCACAGTGACCA
TCCTCCCTGGACTCCCCACATCTCCAGAGAGTGCTGCATCAGCGTGTGGGAACAGTTCAGCTGGGAAACC
AGACAAGGACAGTAAGAAAGAAAAAAAGGGCCTACTGAAGCTGCTTTCTGGTGCCTCCACCAAACGCAAG
CCCCGAGTCTCCCCTCCAGCATCACCTACCCTGGATGTGGAGCTGGGTGCTGGGGAGGCTCCCTTGCAGG
GAGCAGTAGGTCCTGAGCTGCCGCTAGGGGGCAGCCACGGCAGAGTGGGGTCATGCCCCACAGATGGTGA
TGGTCCAGTGGCCGCTGGAACAGCAGCCCTAGCCCAGGATGCCTTCCACCGCAAGACAAGCTCCCTGGAC
TCCGCAGTGCCCATTGCTCCACCACCTCGCCAGGCCTGCTCCTCCCTGGGCCCAGTCATGAATGAGGCCC
GGCCTGTTGTTTGTGAAAGGCACAGGGTGGTGGTTTCCTACCCTCCTCAGAGTGAGGCCGAACTTGAACT
CAAGGAAGGAGATATTGTGTTTGTTCATAAGAAACGAGAGGACGGCTGGTTCAAAGGCACGTTACAGAGG
AATGGGAAGACTGGCCTTTTCCCAGGGAGCTTTGTGGAAAACATCTGAGAAGACGGGACACGGAGAAAGC
TTATCATCACACCACGTGTGACTAAAGAGCACAAAGCAGTTTCATAGAAAGAGCACATCTGTGGACTTCC
AGATCTTCAAGAACCGAGCAGAAGATGGGCACCTGACTCCAGAGCCCCGGCCTGGTTACCCCAGGGGCAG
AGGGAAGGAGGACACACCTGTGTGGGTTCCGTCTCTCTGGGTTCTGATGTGTAAAGTGTGCCTTGTAATG
TCTAATGGACTTTACAGATAAATGTCTTTTTTTTTTTAAGATGTATAACTAAAATGGACAATTGTTTACA
AGGCTTAACTAATTTATTTGCTTTTTTAAAACTTGAACTTTCTTGTAATAGCAAAT

Figure 15: Mouse POSH Protein sequence (Public gi: 10946922; SEQ ID NO: 9)

MDESALLDLLECPVCLERLDASAKVLPCQHTFCKRCLLGIVGSRNELRCPECRTLVGSGVDELPSNILLV
RLLDGIKQRPWKPGPGGGGGTTCTNTLRAQGSTVVNCGSKDLQSSQCGQQPRVQAWSPPVRGIPQLPCAK
ALYNYEGKEPGDLKFSKGDTIILRRQVDENWYHGEVSGVHGFFPTNFVQIIKPLPQPPPQCKALYDFEVK
DKEADKDCLPFAKDDVLTVIRRVDENWAEGMLADKIGIFPISYVEFNSAAKQLIEWDKPPVPGVDTAECP
SATAQSTSASKHPDTKKNTRKRHSFTSLTMANKSSQGSQNRHSMEISPPVLISSSNPTAAARISELSGLS
CSAPSQVHISTTGLIVTPPPSSPVTTGPAFTFPSDVPYQAALGSMNPPLPPPPLLAATVLASTPSGATAA
VAAAAAAAAAAGMGPRPVMGSSEQIAHLRPQTRPSVYVAIYPYTPRKEDELELRKGEMFLVFERCQDGWY
KGTSMHTSKIGVFPGNYVAPVTRAVTNASQAKVSMSTAGQASRGVTMVSPSTAGGPTQKPQGNGVAGNPS
VVPTAVVSAAHIQTSPQAKVLLHMSGQMTVNQARNAVRTVAAHSQERPTAAVTPIQVQNAACLGPASVGL
PHHSLASQPLPPMAGPAAHGAAVSISRTNAPMACAAGASLASPNMTSAMLETEPSGRTVTILPGLPTSPE
SAASACGNSSAGKPDKDSKKEKKGLLKLLSGASTKRKPRVSPPASPTLDVELGAGEAPLQGAVGPELPLG
GSHGRVGSCPTDGDGPVAAGTAALAQDAFHRKTSSLDSAVPIAPPPRQACSSLGPVMNEARPVVCERHRV
VVSYPPQSEAELELKEGDIVFVHKKREDGWFKGTLQRNGKTGLFPGSFVENI

Figure 16: Drosophila melanogaster POSH mRNA sequence (public gi:17737480; SEQ ID NO:10)

CATTTGTATCCGCTTGGCCACGAGCTTTGGCTGCACTTGGCAAACTTAATAAATTAAACATTGAATCCTG
CCTATTGCAACGATAATATAATCTGATTTAGTGCATTAAGAACGACAAGTAGCGATTATAATAGTAGATT
TTAGCATTTGAGCTAAATTTATTTCCCAACCGCGTCTTGGGATTGCGTATGCGTGAGCCAGTACCTGCAT
GTGTGTGTGTTTTGGAATGTGGCCCTGCACGAAATTCAAATAGTGACCATCCTTGAGATTTTGCATACTG
GCAAGATGGACGAGCACACGTTAAACGACCTGTTGGAGTGCTCCGTGTGTCTTGAGCGACTGGACACCAC
ATCGAAGGTGCTGCCATGCCAGCACACCTTCTGCCGCAAATGCTTGCAGGACATTGTGGCCAGTCAGCAC
AAGTTGCGATGCCCGGAGTGCCGCATCCTGGTCTCTTGCAAAATTGATGAGCTGCCTCCAAACGTCTTGC
TGATGCGAATCTTAGAAGGCATGAAACAAAATGCAGCAGCTGGCAAAGGAGAAGAAAAGGGAGAGGAGAC
TGAAACACAGCCGGAAAGGGCCAAACCTCAGCCGCCAGCGGAATCAGTGGCCCCGCCTGACAACCAACTA
CTCCAGCTGCAGTCACATCAGCAATCTCATCAGCCGGCTCGTCACAAGCAACGTCGATTTCTACTCCCCC
ACGCCTATGCCCTCTTTGACTTCGCCTCCGGTGAAGCCACCGATCTAAAGTTCAAGAAAGGGGATCTGAT
ACTGATCAAGCATCGCATCGACAACAACTGGTTTGTGGGTCAAGCGAATGGTCAGGAGGGCACATTTCCC
ATCAACTACGTCAAGGTATCGGTTCCGCTGCCCATGCCGCAGTGCATTGCCATGTATGACTTTAAGATGG
GGCCCAACGACGAGGAGGGATGCCTCGAATTTAAGAAAAGCACTGTAATACAGGTAATGCGCCGAGTTGA
TCATAATTGGGCAGAAGGACGAATTGGCCAGACCATCGGAATCTTTCCAATAGCATTCGTTGAGCTGAAT
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GGCAGCGGGCCCTTCCTCCGGTTCCAGTTATTGATCCCACGGTGGTCACGGAATCCAGTTCGGGATCCTC
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ATCTCACTGCCGAATACCCCCCAACATGTAGTAGCTTCCGGATCGGCGTCTGTTCGTTTCCGTGACAAGG
GAGCAAAGGAGAAACGCCACTCACTAAATGCTTTGCTGGGAGGAGGAGCTCCATTAAGTCTGCTGCAGAC
CAACCGCCATTCGGCTGAAATTCTTAGCCTGCCCCATGAACTAAGCCGCTTGGAAGTTTCCAGCTCAACA
GCTCTAAAACCCACGTCAGCCCCACAGACATCGCGTGTACTTAAGACCACTGTTCAGCAGCAGATGCAAC
CGAATTTACCCTGGGGATACTTAGCCCTGTTCCCATACAAACCACGCCAAACGGATGAGCTGGAATTAAA
AAAGGGTTGTGTTTACATTGTGACCGAACGATGTGTGGACGGTTGGTTCAAGGGAAAAAACTGGTTGGAC
ATCACTGGAGTGTTCCCGGGCAACTACCTGACGCCCCTGCGCGCCCGCGACCAGCAGCAGTTAATGCATC
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TGTGCGACTCAACAACATGCTGTCCATGCAACCGCCTGATTTGCCACCTCGTCAGCAGCAGGCTACCGCC
ACGACCACCAGTTGCTCTGTGTGGTCGAAACCAGTGGAGGCGCTGTTCAGCAGAAAATCGGAGCCCAAGC
CTGAAACTGCCACAGCTTCGACTACGAGCAGCAGTTCCTCTGGAGCAGTGGGACTTATGAGGAGATTAAC
TCACATGAAAACACGCTCCAAATCTCCGGGAGCGTCCTTGCAGCAAGTTCCGAAAGAAGCTATTAGCACA
AATGTGGAATTTACAACAAACCCATCAGCTAAATTGCATCCAGTACATGTAAGATCCGGCTCGTGCCCCA
GTCAGCTGCAGCACAGTCAACCGCTCAATGAAACTCCAGCAGCCAAGACAGCGGCACAACAACAGCAGTT
CCTACCCAAGCAGCTGCCTTCCGCTTCTACGAACAGCGTTTCGTACGGATCGCAACGCGTGAAAGGAAGC
AAGGAACGTCCTCACTTGATTTGCGCGAGACAATCATTAGATGCAGCTACATTTCGCAGTATGTACAACA
ATGCCGCGTCGCCGCCGCCACCTACTACTTCCGTGGCCCCAGCTGTCTACGCCGGCGGTCAGCAACAGGT
GATTCCTGGAGGTGGAGCGCAATCCCAGTTGCATGCCAATATGATTATTGCACCCAGCCATCGGAAGTCG
CACAGCCTAGATGCGAGTCATGTGCTGAGTCCCAGCAGCAATATGATCACGGAGGCGGCCATTAAGGCCA
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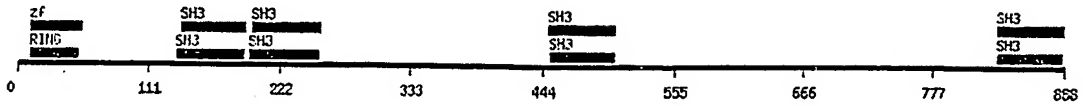
CAGTGACATTGAACTAGAGCTACATTTGGGCGACATTATCTACGTCCAGCGGAAGCAGAAGAACGGCTGG
TATAAGGGCACCCATGCCCGTACCCACAAAACCGGGCTGTTCCCCGCCTCCTTTGTTGAACCGGATTGTT
AGGAAAGTTATGGTTCAAACTAGAATTTATTAAGCGAAATTCCAAATTACTTGTCTAAAAGGATTCAATC
GTCGGTCTATTCGGGCTTCCAAATACGCAATCTCATATTTCTCTTTTCAAAAAAGAAACCGTTTTGTACT
CTTCCAATCGAATGGGCAGCTCGCCGTTGTACTTTTTTATACAATGCTTGATCAAAATAGGCTAGCCATG
TAAGACTTAGGGAACAGTTACTTAAGCCTTAGCGATTAGTTAGCTAGAGAAATAATCTAACCGATCCTTG
TGCCCTCTACAAAGTTATTTGTAATATACGATACTCAGTAATAAAAAAAAAAAAAAAAAAAAAAAAAAA

Figure 17: Drosophila melanogaster POSH protein sequence (public gi:17737481; SEQ ID NO:11)

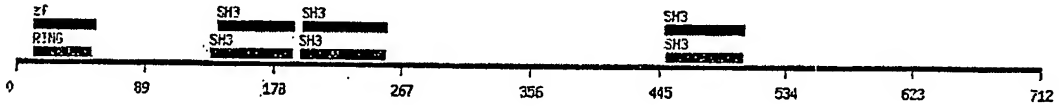
MDEHTLNDLLECSVCLERLDTTSKVLPCQHTFCRKCLQDIVASQHKLRCPECRILVSCKIDELPPNVLLM
RILEGMKQNAAAGKGEEKGEETETQPERAKPQPPAESVAPPDNQLLQLQSHQQSHQPARHKQRRFLLPHA
YALFDFASGEATDLKFKKGDLILIKHRIDNNWFVGQANGQEGTFPINYVKVSVPLPMPQCIAMYDFKMGP
NDEEGCLEFKKSTVIQVMRRVDHNWAEGRIGQTIGIFPIAFVELNAAAKKLLDSGLHTHPFCHPPKQQGQ
RALPPVPVIDPTVVTESSSGSSNSTPGSSNSSSTSSSNNCSPNHQISLPNTPQHVVASGSASVRFRDKGA
KEKRHSLNALLGGGAPLSLLQTNRHSAEILSLPHELSRLEVSSSTALKPTSAPQTSRVLKTTVQQQMQPN
LPWGYLALFPYKPRQTDELELKKGCVYIVTERCVDGWFKGKNWLDITGVFPGNYLTPLRARDQQQLMHQW
KYVPQNADAQMAQVQQHPVAPDVRLNNMLSMQPPDLPPRQQQATATTTSCSVWSKPVEALFSRKSEPKPE
TATASTTSSSSSGAVGLMRRLTHMKTRSKSPGASLQQVPKEAISTNVEFTTNPSAKLHPVHVRSGSCPSQ
LQHSQPLNETPAAKTAAQQQQFLPKQLPSASTNSVSYGSQRVKGSKERPHLICARQSLDAATFRSMYNNA
ASPPPPTTSVAPAVYAGGQQQVIPGGGAQSQLHANMIIAPSHRKSHSLDASHVLSPSSNMITEAAIKASA
TTKSPYCTRESRFRCIVPYPPNSDIELELHLGDIIYVQRKQKNGWYKGTHARTHKTGLFPASFVEPDC

Figure 18: POSH Domain Analysis

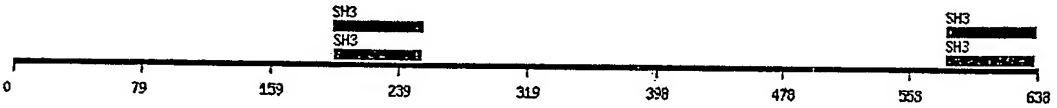
hPOSH protein sequence :



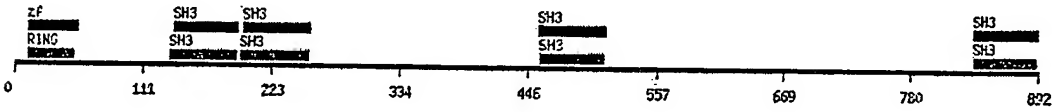
N terminus protein fragment of hPOSH (public gi:10432612):



C terminus protein fragment of hPOSH (public gi:7959249):



Mouse POSH Protein sequence (Public gi: 10946922):



Drosophila melanogaster POSH protein sequence (public gi:17737481)

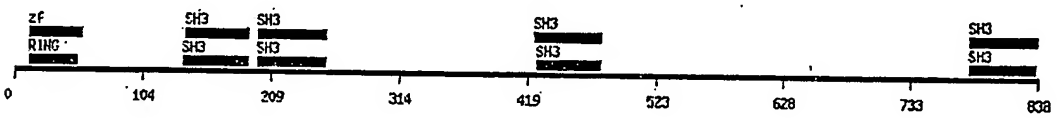


Figure 19: Human POSH has ubiquitin ligase activity

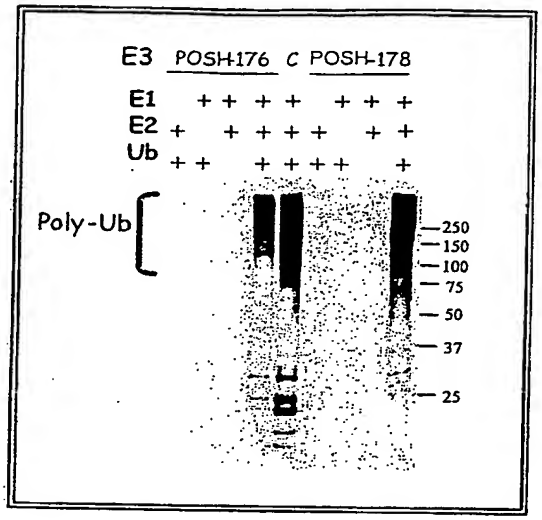


Figure 20

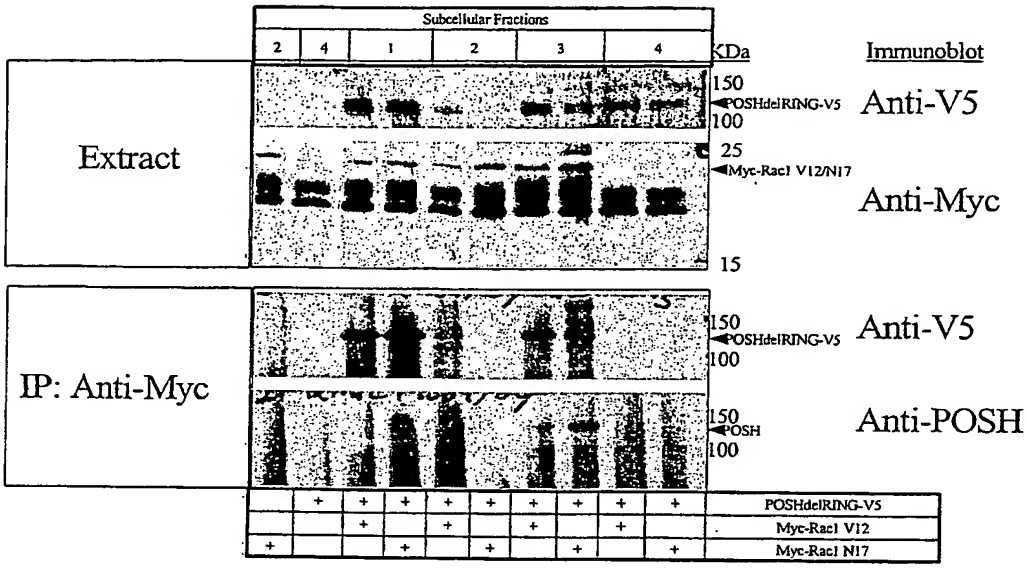

Subcellular Fractions
2
4
1
2
3
4
KDa
Immunoblot
Extract
150
POSHdelRING-V5
Anti-V5
100
25
Myc-Rac1 V12/N17
Anti-Myc
15
IP: Anti-Myc
150
POSHdelRING-V5
Anti-V5
100
150
POSH
Anti-POSH
100
POSHdelRING-V5
Myc-Rac1 V12
Myc-Rac1 N17

Figure 21. PLD activity in medium of transfected cells

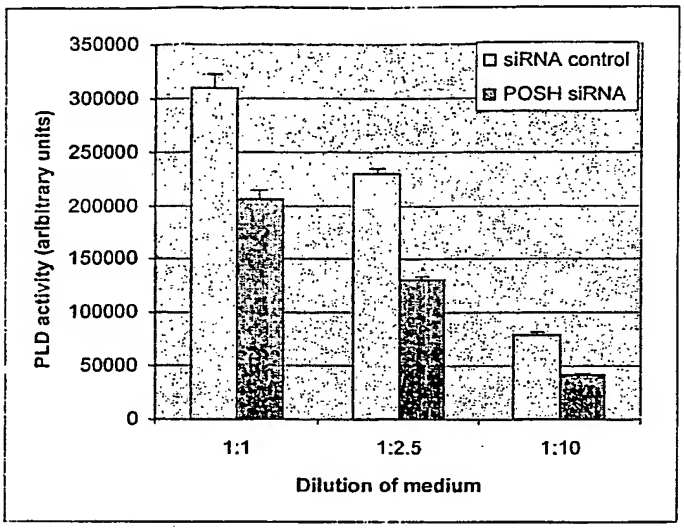


Figure 22.

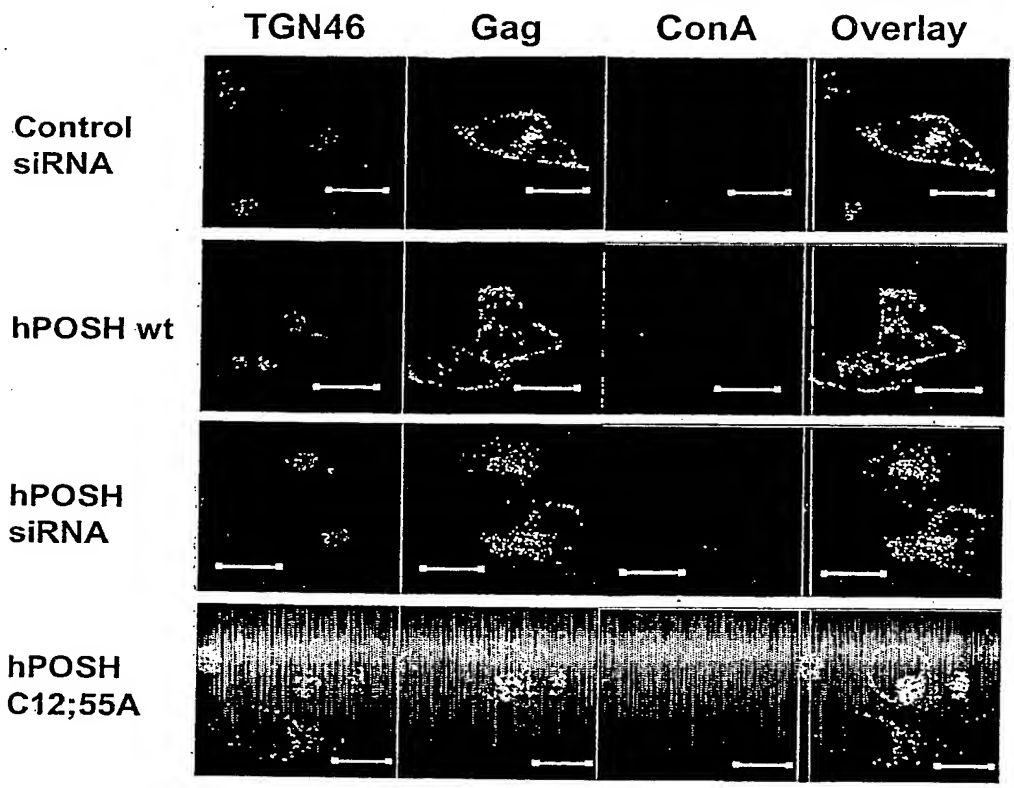
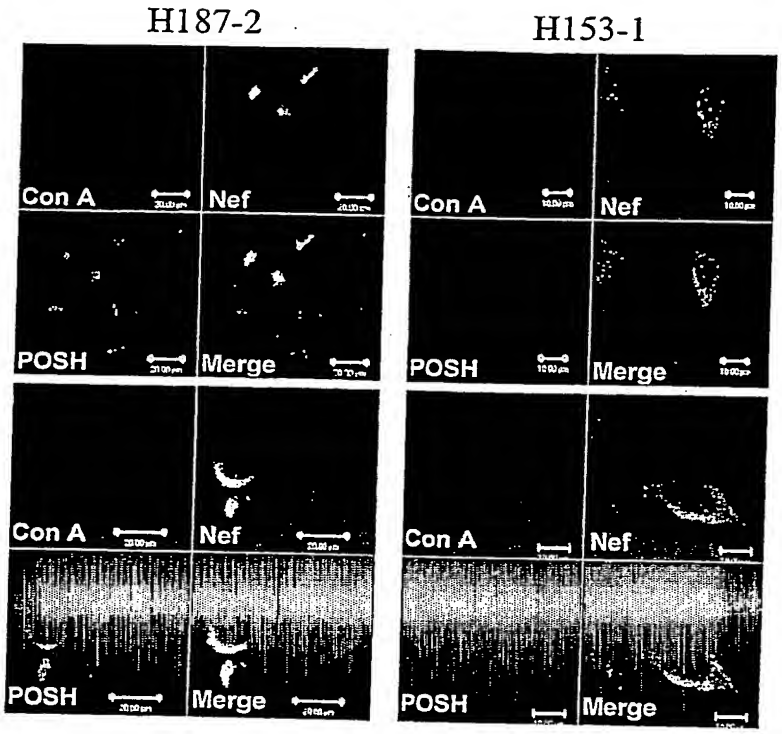

TGN46
Gag
ConA
Overlay
Control siRNA
hPOSH wt
hPOSH siRNA
hPOSH C12;55A

Figure 23.


H187-2
H153-1
Con A
Nef
POSH
Merge
Con A
Nef
POSH
Merge
Con A
Nef
POSH
Merge
Con A
Nef
POSH
Merge

5

Figure 24.

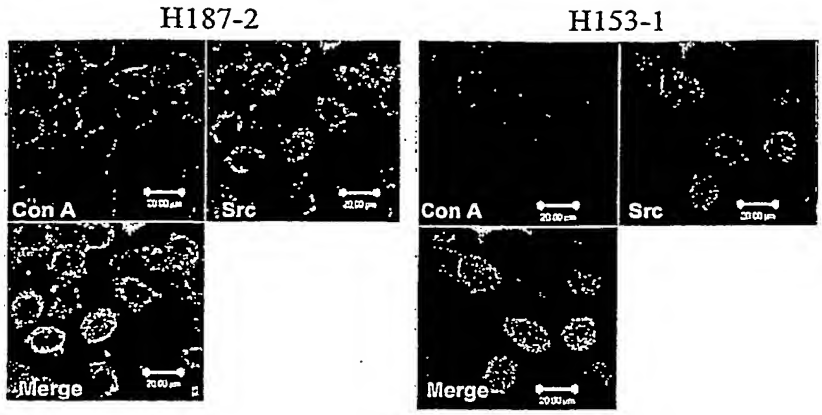
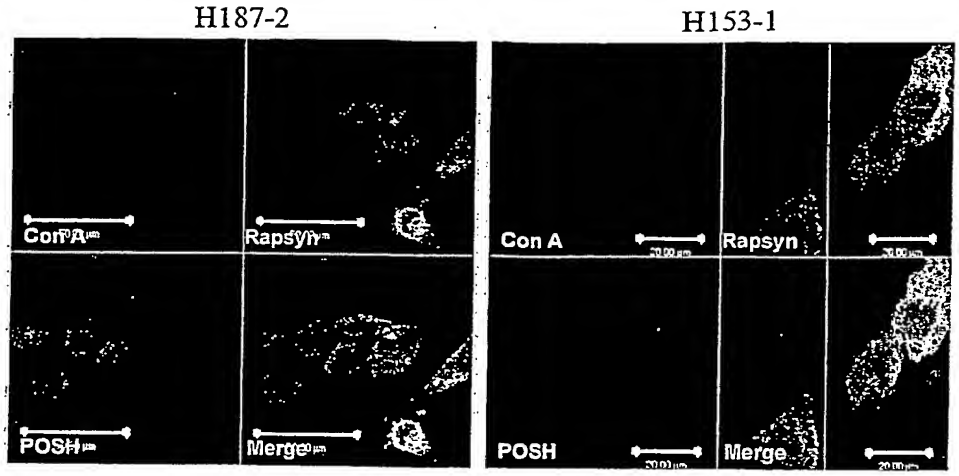


Figure 25.



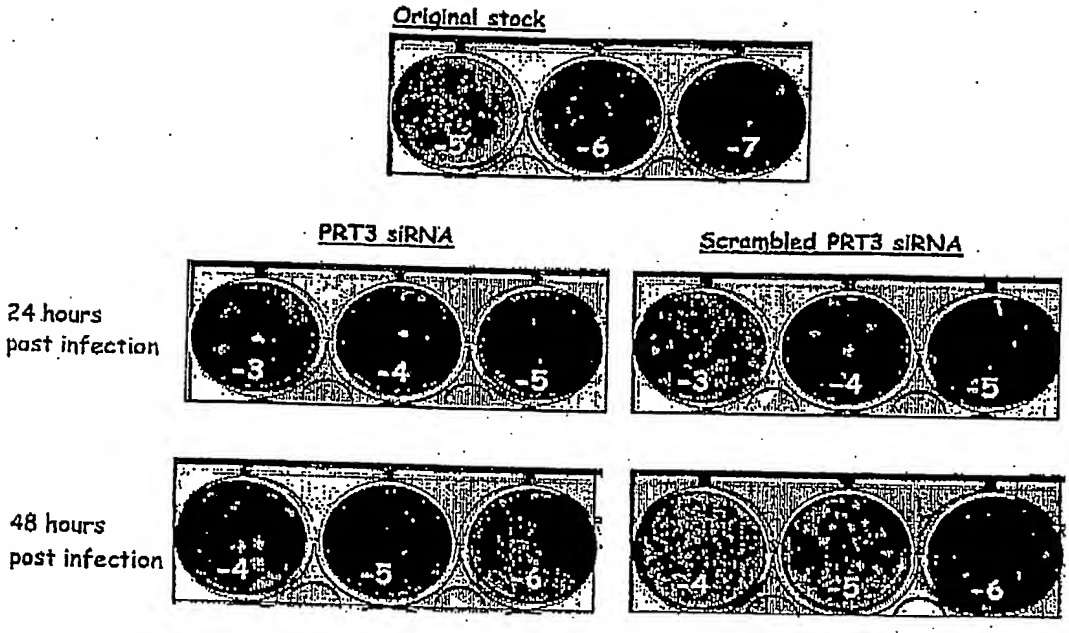

Original stock
-5
-6
-7
PRT3 siRNA
Scrambled PRT3 siRNA
24 hours post infection
-3
-4
-5
-3
-4
-5
48 hours post infection
-4
-5
-6
-4
-5
-6

FIGURE 26

Figure 27.

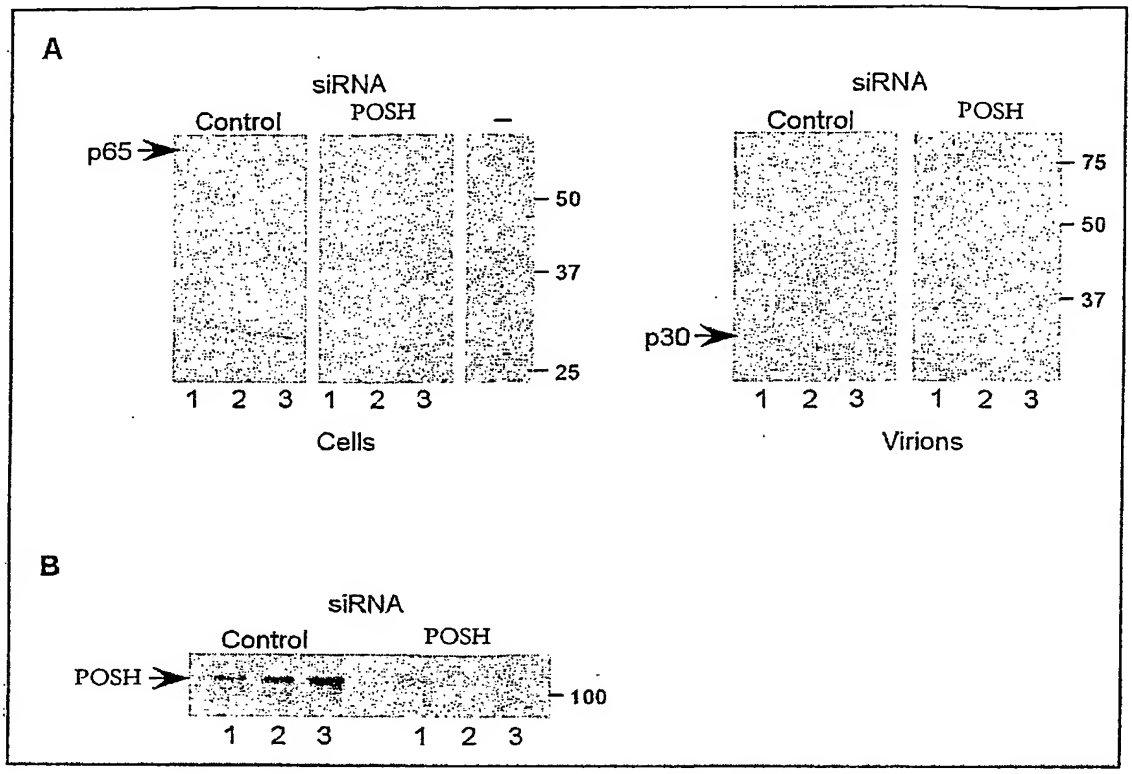

A
siRNA
Control
POSH
–
p65
50
37
25
1 2 3 1 2 3
Cells
siRNA
Control
POSH
p30
75
50
37
1 2 3 1 2 3
Virions
B
siRNA
Control
POSH
POSH
100
1 2 3 1 2 3

Figure 28.

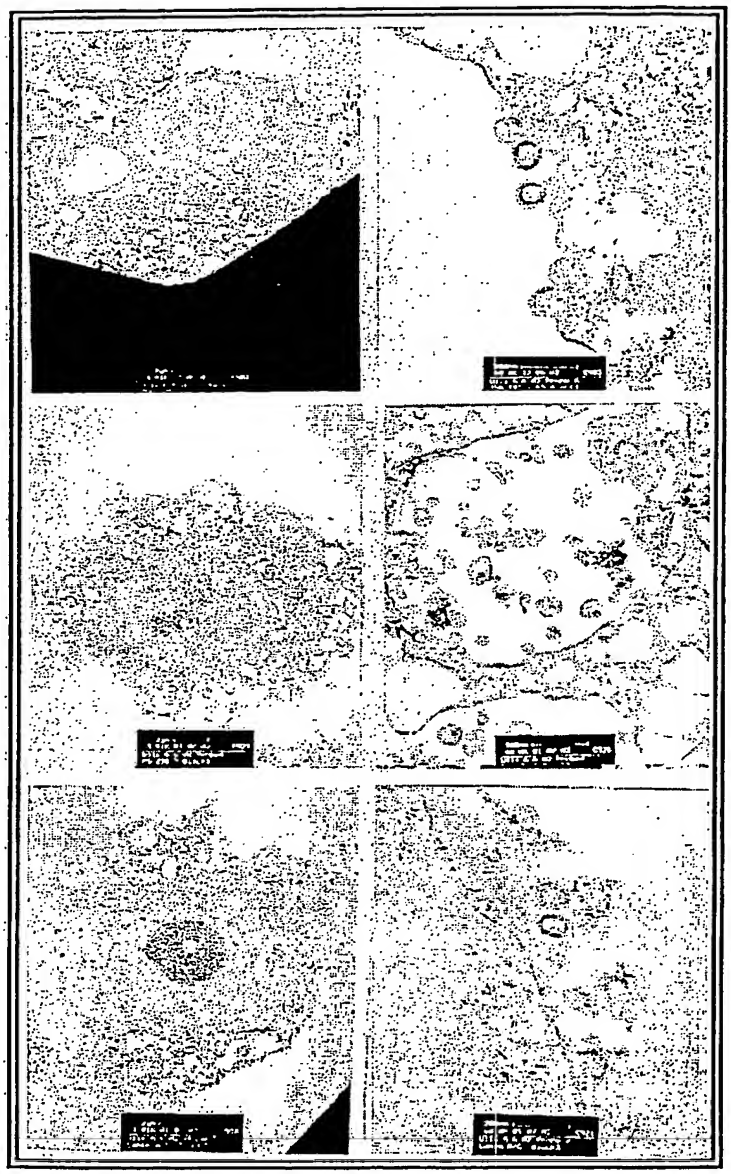


Figure 29A.

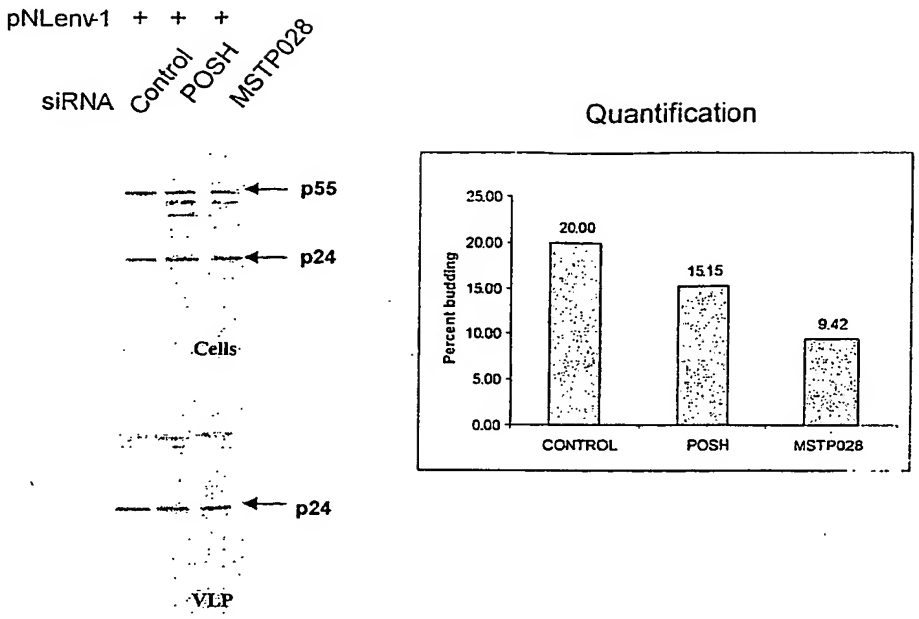
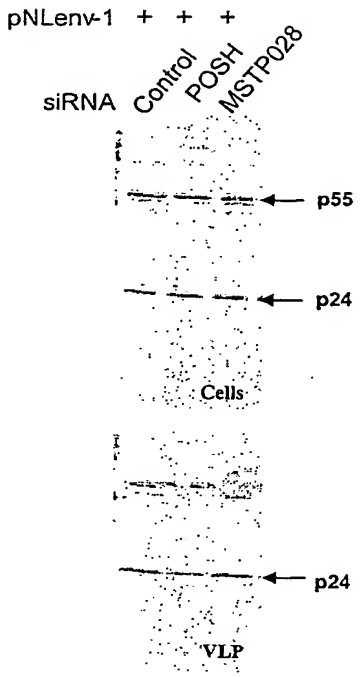

pNLenv-1 + + +
siRNA Control POSH MSTP028
p55
p24
Cells
p24
VLP
Quantification
Percent budding
25.00
20.00
15.00
10.00
5.00
0.00
20.00
15.15
9.42
CONTROL
POSH
MSTP028

Figure 29B.



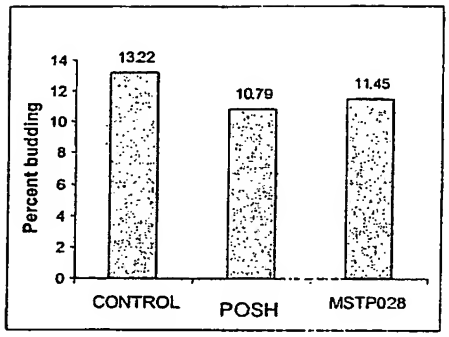


Figure 30. Putative PKA phosphorylation sites in hPOSH.

MDESALLDLLECPVCLERLDASAKVLPCQHTFCKRCLLGIVGSRNELRCPECRTLVGSGVEELPSNILLV
RLLDGIKQRPWKPGPGGGSGTNCTNALRSQSSTVANCSSKDLQSSQGGQQPRVQSWSPPVRGIPQLPCAK
ALYNYEGKEPGDLKFSKGDIIILRRQVDENWYHGEVNGIHGFFPTNFVQIIKPLPQPPPQCKALYDFEVK
DKEADKDCLPFAKDDVLTVIRRVDENWAEGMLADKIGIFPISYVEFNSAAKQLIEWDKPPVPGVDAGECS
SAAAQSSTAPKHSDTKKNTKKRHSFTSLTMANKSSQASQNRHSMEISPPVLISSSNPTAAARISELSGL
S
CSAPSQVHISTTGLIVTPPPSSPVTTGPSFTFPSDVPYQAALGTLNPPLPPPPLLAATVLASTPPGATAA
AAAAGMGPRPMAGSTDQIAHLRPQTRPSVYVAIYPYTPRKEDELELRKGEMFLVFERCQDGWFKGTSMHT
SKIGVFPGNYVAPVTRAVTNASQAKVPMSTAGQTSRGVTMVSPSTAGGPAQKLQGNGVAGSPSVVPAAVV
SAAHIQTSPQAKVLLHMTGQMTVNQARNAVRTVAAHNQERPTAAVTPIQVQNAAGLSPASVGLSHHSLAS
PQPAPLMPGSATHTAAISISRASAPLACAAAAPLTSPSITSASLEAEPSGRIVTVLPGLPTSPDSASSAC
GNSSATKPDKDSKKEKKGLLKLLSGASTKRKPRVSPPASPTLEVELGSAELPLQGAVGPELPPGGGHGRA
GSCPVDGDGPVTTAVAGAALAQDAFHRKASSLDSAVPIAPPPRQACSSLGPVLNESRPVVCERHRVVVSY
PPQSEAELELKEGDIVFVHKKREDGWFKGTLQRNGKTGLFPGSFVENI

Figure 31. Phosphorylation of hPOSH regulates binding of GTP-loaded Rac-1.

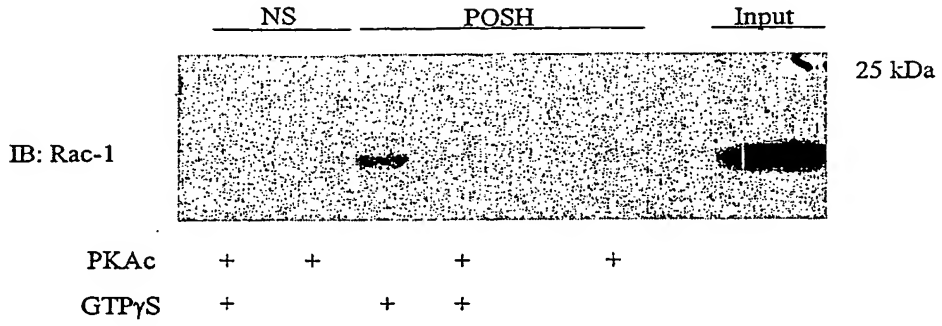
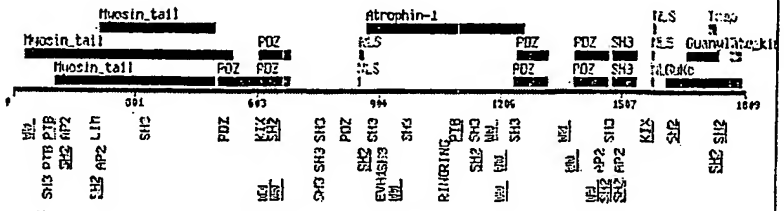
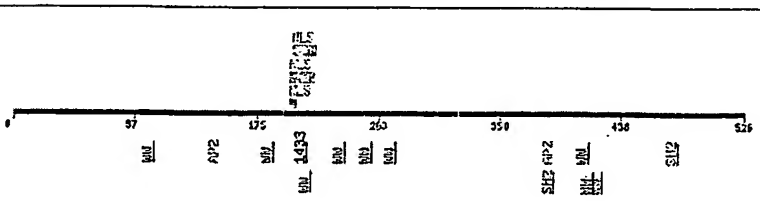
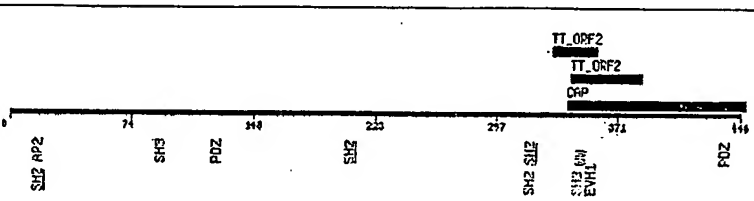
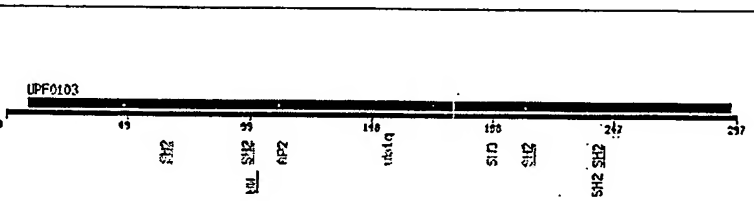
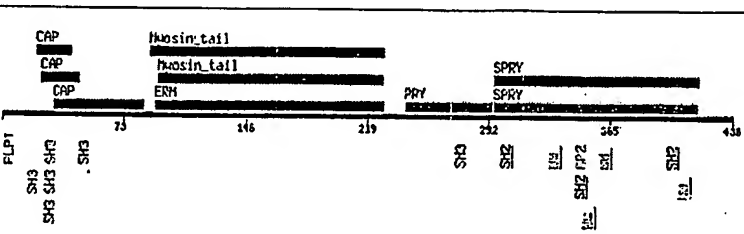
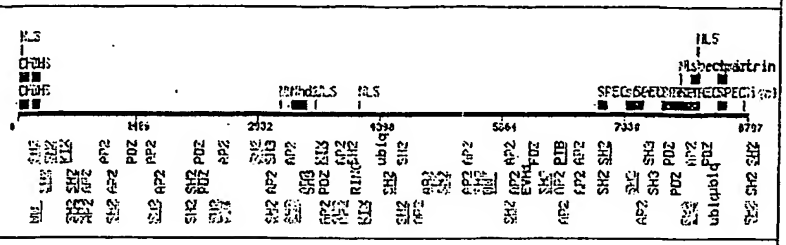
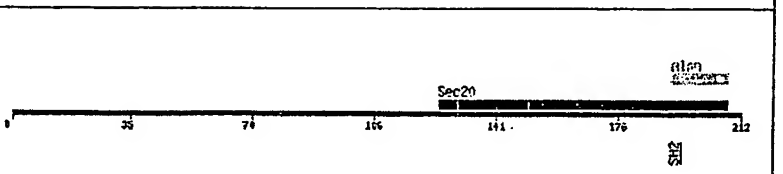
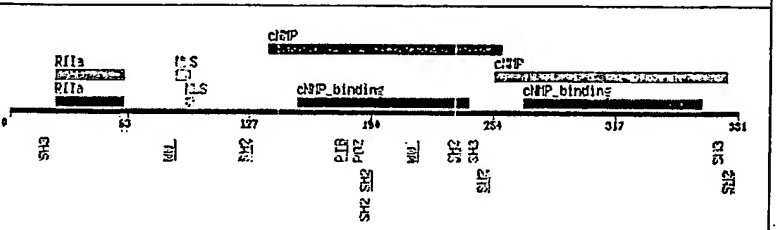
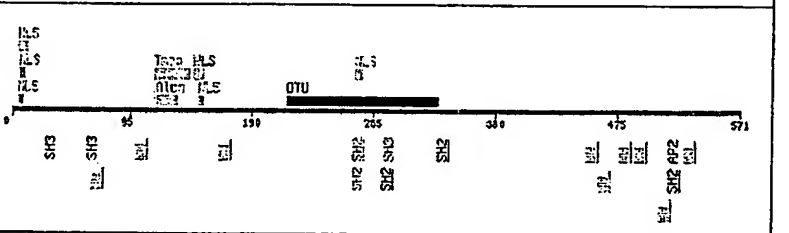
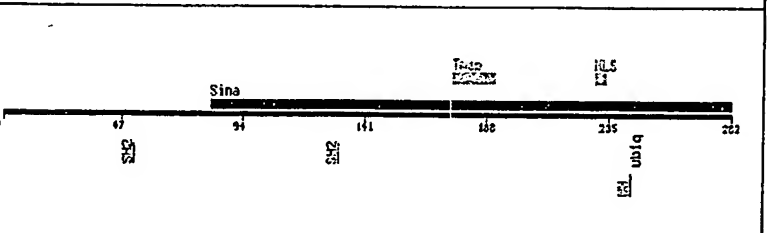
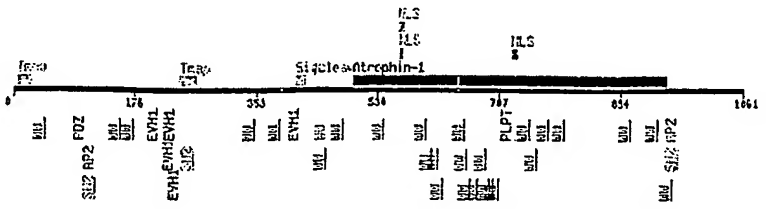
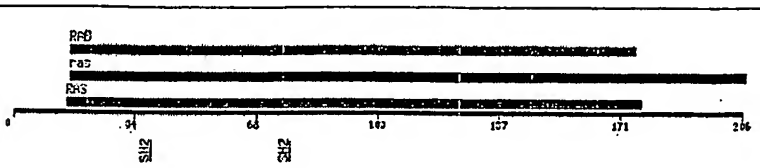
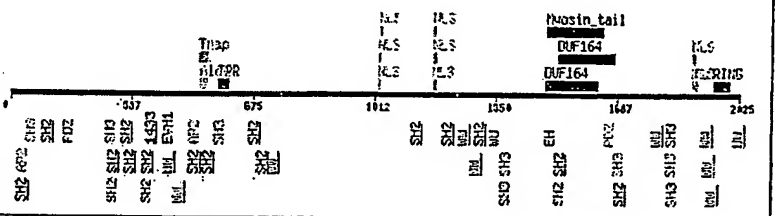
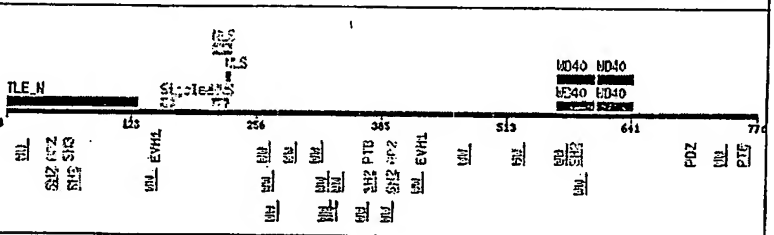
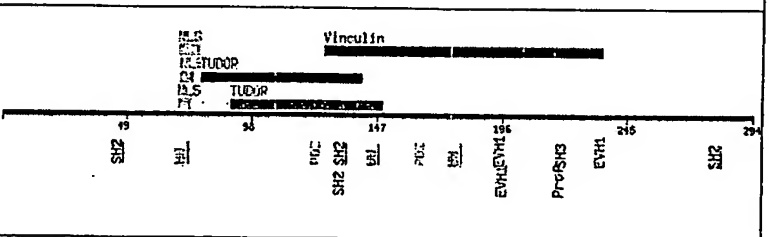
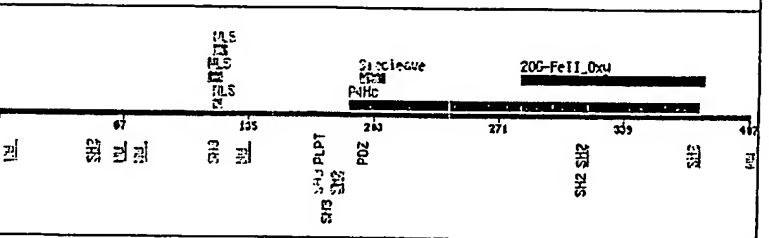
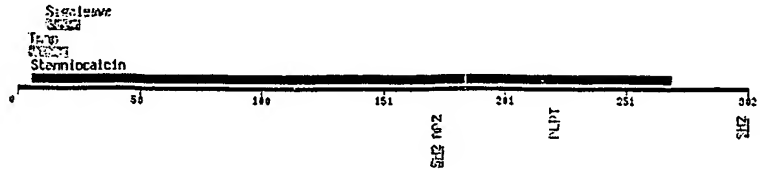
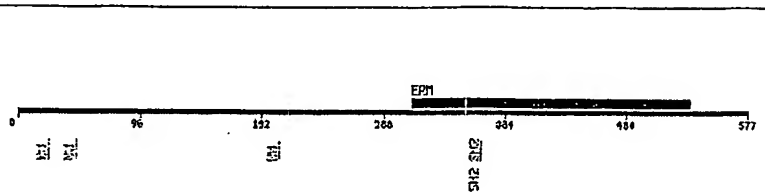
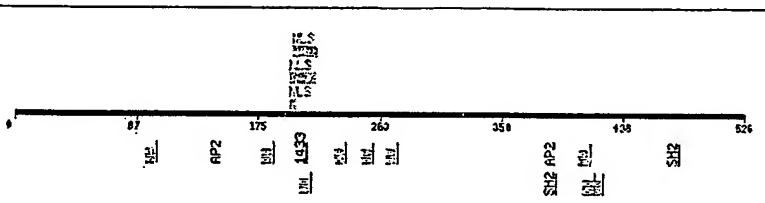
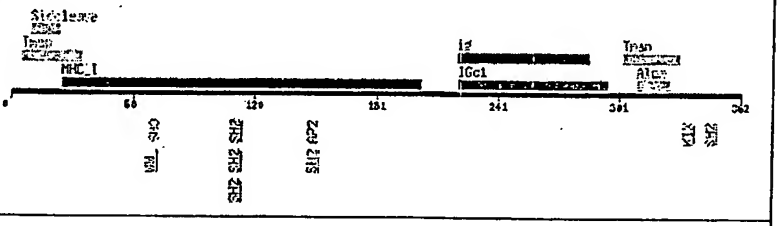
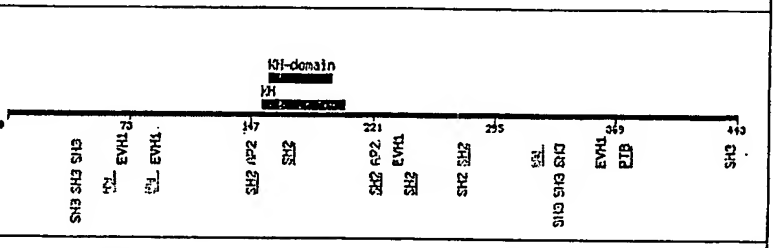
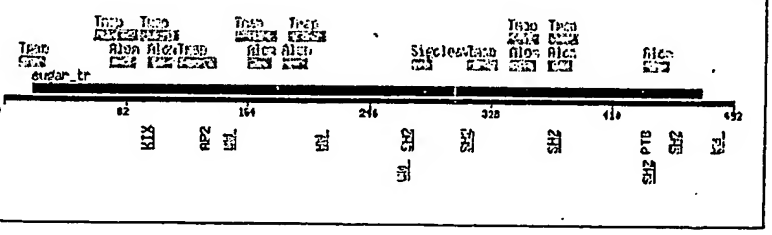


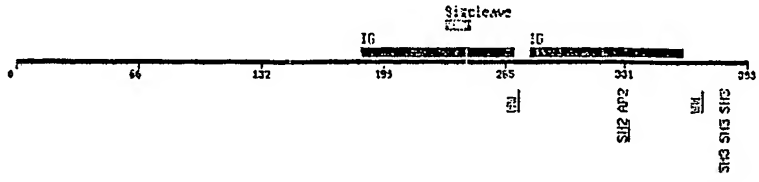
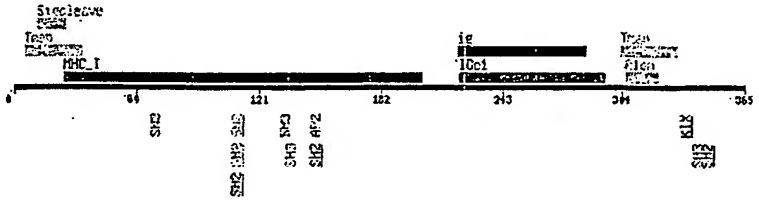
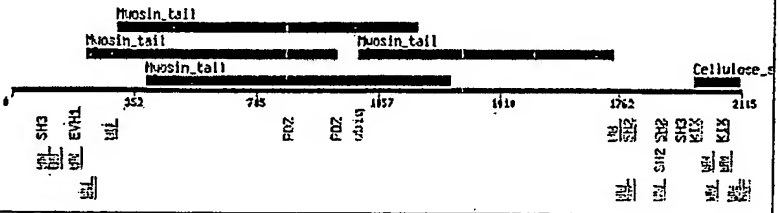
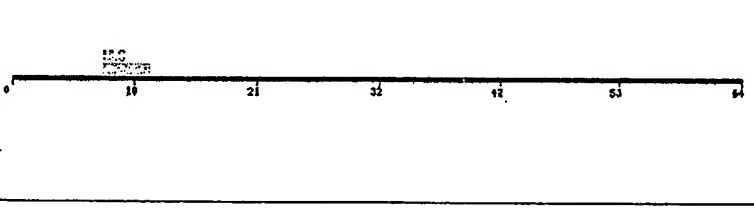
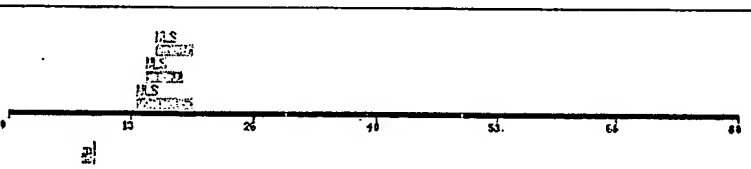
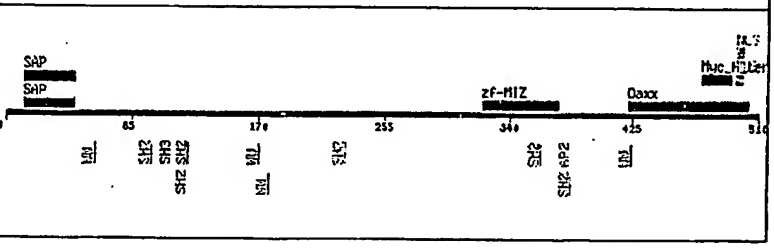
Figure 32.

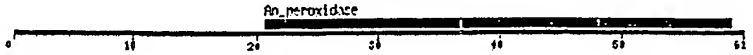
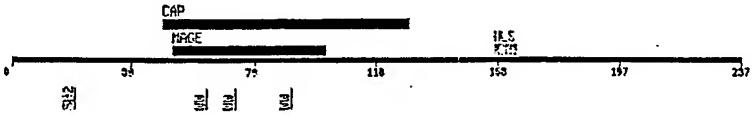
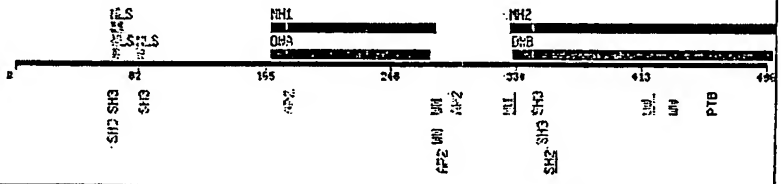
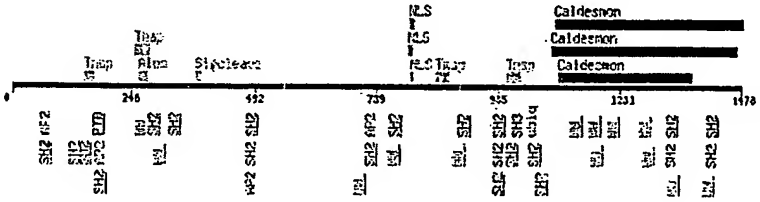
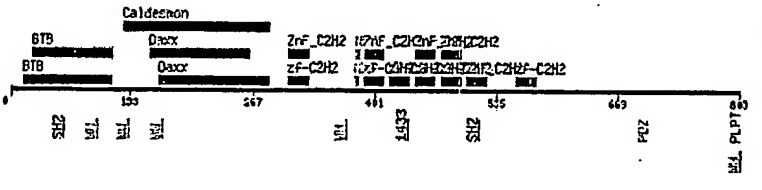
BLAST hit	UniGene	Name	Longest Protein	Domain Analysis
AK092170	Hs.302746	MSTP028		
AB011155.1	Hs.170290	DLG5 discs, large (Drosophila) homolog 5	NP_004738 aa887	
XM_208944.1	None		XP_208944.1	
AB046818	Hs.23740	KIAA1598 KIAA1598 protein	10047271 aa146	
BC018733.1	Hs.20814	CGI-27 C21orf19-like protein	4680693	
AL080170.1	Hs.51692	BIA2 BIA2	5262640	
BC036531.1	Hs.172928	COL1A1 collagen, type I, alpha 1		
J03930.1		Human intestinal alkaline phosphat		

BLAST hit	UniGene	Name	Longest Protein	Domain Analysis
AF535142 AF535142	Hs.416719	**SYNE1** spectrin repeat containing, nuclear envelope 1	AAN60442.1 8797 aa	
M93425	Hs.62	**PTPN12** protein tyrosine phosphatase, non-receptor type 12	292409 aa504>	
BC009710	Hs.100651	**GOSR2** golgi SNAP receptor complex member 2	16905522 16905520	
M18468 M18468 BC036285 M18468	Hs.183037	**PRKAR1A** protein kinase, cAMP-dependent, regulatory, type I, alpha (tissue specific extinguisher 1)		
AL137509 in 3'UTR?	Hs.184029	**DKFZp761A052** hypothetical protein	AAH09917	
BC013082 U76247	Hs.295923	**SIAH1** seven in absentia homolog 1 (Drosophila)	AAC51907	
BC032851	Hs.3144	**CBLB** Cas-Br-M (murine) ecotropic		

BLAST hit	UniGene	Name	Longest Protein	Domain Analysis
		retroviral transforming sequence b		
BC006358 -bp 2026 bp 1561 bp1564 bp1562 bp1561 bp1564	Hs.66048	VCY2IP1 VCY2 interacting protein 1	21739763	
BC039858	Hs.6906	RALA v-ral simian leukemia viral oncogene homolog A (ras related)	24980847 aa1>	
D83077	Hs.118174	TTC3 tetratricopeptide repeat domain 3	1304132 aa1027 aa1030	
M99435	Hs.28935	TLE1 transducin-like enhancer of split 1 (E(sp1) homolog, Drosophila)	307510	
U18423	Hs.288986	SMN1 survival of motor neuron 1, telomeric	624186	
BC001723, AJ310544	Hs.324277	EGLN2 egl nine homolog 2 (C. elegans)	14547148	
BC000386	Hs.58189	EIF3S3 eukaryotic translation		

BLAST hit	UniGene	Name	Longest Protein	Domain Analysis
		initiation factor 3, subunit 3 gamma, 40kDa		
AF055460	Hs.155223	STC2 stanniocalcin 2	AAC27036	
BC013876	Hs.278898	OPTN optineurin	AAH13876	
XM_208944 AK094466	Hs.420088	Unnamed protein product	XP_208944	
X61709	Hs.77961	HLA-B major histocompatibility complex, class I, B	32189	
M88108	Hs.119537	KHDRBS1 KH domain containing, RNA binding, signal transduction associated 1	189500	
K03195/ NM_006516	Hs.169902	SLC2A1 solute carrier family 2 (facilitated glucose transporter),	5730051	

BLAST hit	UniGene	Name	Longest Protein	Domain Analysis
AL137493	Hs.35945	**DKFZp434B1231** hypothetical protein DKFZp434B1231	6808117	
L06425	Hs.181244	**HLA-A**	575249	
BC008345	Hs.301512	**NUMA1** nuclear mitotic apparatus protein 1	14249928 963aa 35119 2115aa	
AF077202 AF077202	Hs.397853	**HSPC016** hypothetical protein HSPC016	12654537 64aa	
BC000449	Hs.183704	**UBC**		
D26121	Hs.169303	ZFM1 protein alternatively spliced product domain A, B and G		
AF077952	Hs.105779	**PIASY** protein inhibitor of activated STAT protein PIASy	3643111	

BLAST hit	UniGene	Name	Longest Protein	Domain Analysis
BC007034	Hs.118786	MT2A metallothionein 2A	13937857	
AF293026	Hs.32587	SRA1 steroid receptor RNA activator 1	9930614	
X66899	Hs.129953	EWSR1 Ewing sarcoma breakpoint region 1		Synaptophysinx4; Transcription factor IIA; zinc finger x4; NLSx3,
AF035528	Hs.153863	MADH6 MAD, mothers against decapentaplegic homolog 6 (Drosophila)	2736316	
AF441770	Hs.16411	THOC2 THO complex 2	AAM28436	
Y09723	Hs.33532	ZNF151 zinc finger protein 151 (pHZ-67)	2230871	

10/547845

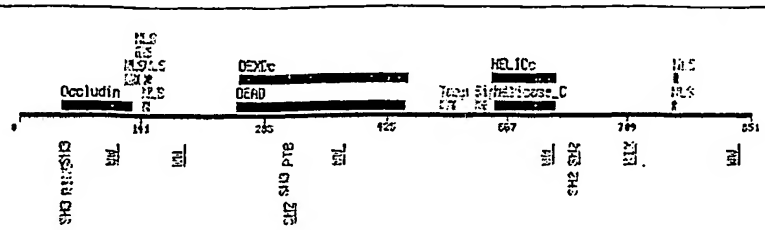
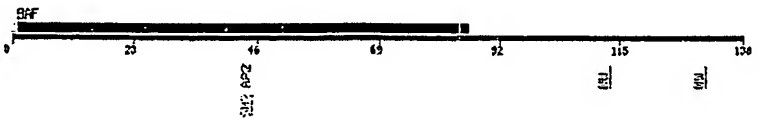
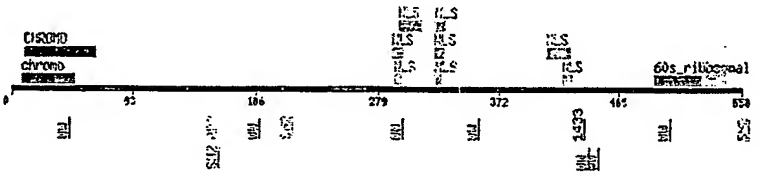
BLAST hit	UniGene	Name	Longest Protein	Domain Analysis
BC012726	Hs.69331	**DDX31** DEAD/H (Asp-Glu-Ala-Asp/His) box polypeptide 31	7505907	
NM_032958	Hs.375569	**POL R2J2** DNA directed RNA polymerase II polypeptide J-related gene		
AF068235.1	Hs.433759	**BANF1** barrier to autointegration factor 1	3002951	
BC014967.1	Hs.5637	**CBX4** chromobox homolog 4	4502603 aa319	

Figure 33.

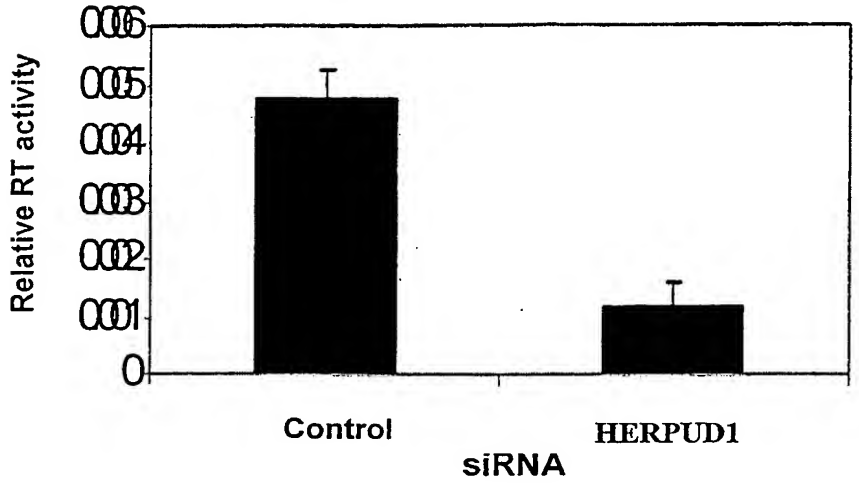


Figure 34A.

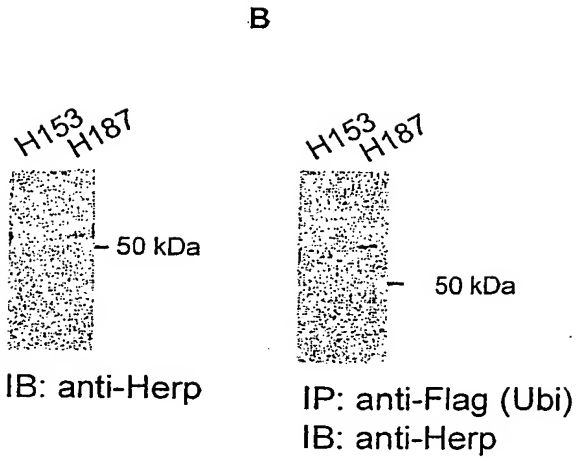

A
B
H153
H187
50 kDa
IB: anti-Herp
H153
H187
50 kDa
IP: anti-Flag (Ubi)
IB: anti-Herp

Figure 34B.

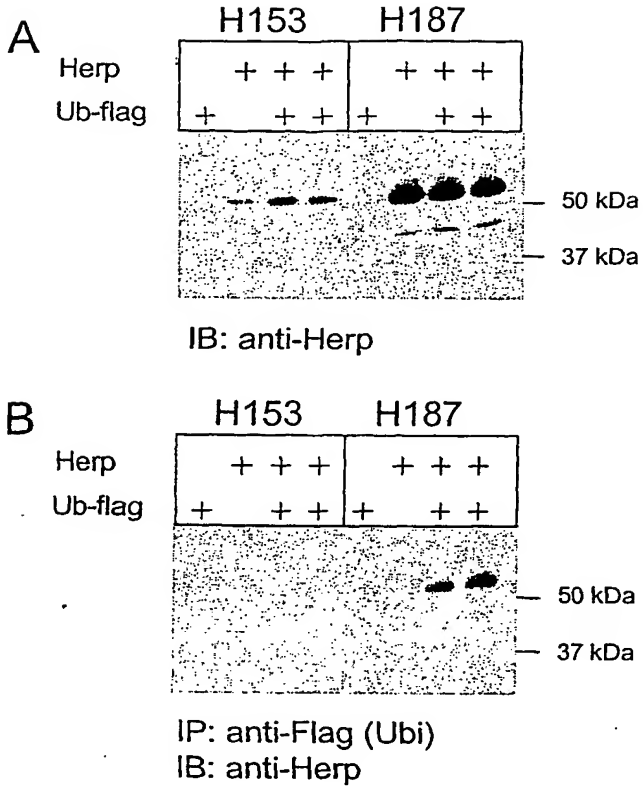


Figure 35.

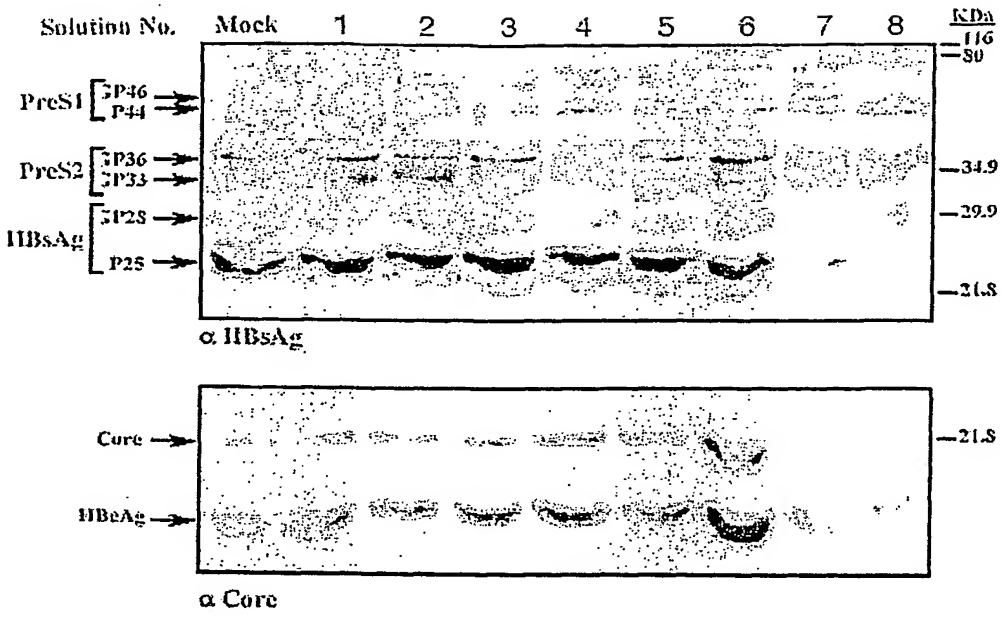


FIGURE 36

Unigene Name: Arf1 Unigene ID: Hs.286221

Human Arf1 mRNA sequence - var1 (public gi: 3360490) (SEQ ID NO: 325)

GCAAAACCAACGCCTGGCTCGGAGCAGCAGCCTCTGAGGTGTCCCTGGCCAGTGTCCTTCCACCTGTCCA
CAAGCATGGGGAACATCTTCGCCAACCTCTTCAAGGGCCTTTTTGGCAAAAAAGAAATGCGCATCCTCAT
GGTGGGCCTGGATGCTGCAGGGAAGACCACGATCCTCTACAAGCTTAAGCTGGGTGAGATCGTGACCACC
ATTCCCACCATAGGCTTCAACGTGGAAACCGTGGAGTACAAGAACATCAGCTTCACTGTGTGGGACGTGG
GTGGCCAGGACAAGATCCGGCCCCTGTGGCGCCACTACTTCCAGAACACACAAGGCCTGATCTTCGTGGT
GGACAGCAATGACAGAGAGCGTGTGAACGAGGCCCGTGAGGAGCTCATGAGGATGCTGGCCGAGGACGAG
CTCCGGGATGCTGTCCTCCTGGTGTTCGCCAACAAGCAGGACCTCCCCAACGCCATGAATGCGGCCGAGA
TCACAGACAAGCTGGGGCTGCACTCACTACGCCACAGGAACTGGTACATTCAGGCCACCTGCGCCACCAG
CGGCGACGGGCTCTATGAAGGACTGGACTGGCTGTCCAATCAGCTCCGGAACCAGAAGTGAACGCGACCC
CCCTCCCTCTCACTCCTCTTGCCCTCTGCTTTACTCTCATGTGGCAAACGTGCGGCTCGTGGTGTGAGTG
CCAGAAGCTGCCTCCGTGGTTTGGTCACCGTGTGCATCGCACCGTGCTGTAAATGTGGCAGACGCAGCCT
GCGGCCAGGCTTTTTATTTAATGTAAATAGTTTTTGTTTCCAATGAGGCAGTTTCTGGTACTCCTATGCA
ATATTACTCAGCTTTTTTTATTGTAAAAAGAAAAATCAACTCACTGTTCAGTGCTGAGAGGGGATGTAGG
CCCATGGGCACCTGGCCTCCAGGAGTCGCTGTGTTGGGAGAGCCGGCCACGCCCTTGGCTTTAGAGCTGT
GTTGAAATCCATTTTGGTGGTTGGTTTTTAACCCAAACTCAGTGCATTTTTTAAAATAGTTAAGAATCCA
AGTCGAGAACACTTGAACACACAGAAGGGAGACCCCGCCTAGCATAGATTTGCAGTTACGGCCTGGATGC
CAGTCGCCAGCCCAGCTGTTCCCCTCGGGAACATGAGGTGGTGGTGGCGCAGCAGACTGCGATCAATTCT
GCATGGTCACAGTAGAGATCCCCGCAACTCGCTTGTCCTTGGGTCACCCTGCATTCCATAGCCATGTGCT
TGTCCCTGTGCTCCCACGGTTCCCAGGGGCCAGGCTGGGAGCCCACAGCCACCCCACTATGCCGCAGGCC
GCCCTACCCACCTTCAGGCAGCCTATGGGACGCAGGGCCCCATCTGTCCCTCGGTCGCCGTGTGGCCAGA
GTGGGTCCGTCGTCCCCAACACTCGTGCTCGCTCAGACACTTTGGCAGGATGTCTGGGGCCTCACCAGCA
GGAGCGCGTGCAAGCCGGGCAGGCGGTCCACCTAGACCCACAGCCCCTCGGGAGCACCCCACCTCTGTGT
GTGATGTAGCTTTCTCTCCCTCAGCCTGCAAGGGTCCGATTTGCCATCGAAAAAGACAACCTCTACTTTT
TTCTTTTGTATTTTGATAAACACTGAAGCTGGAGCTGTTAAATTTATCTTGGGGAAACCTCAGAACTGGT
CTATTTGGTGTCGTGGAACCTCTTACTGCTTTCAATACACGATTAGTAATCAAAAAAAAAAAAAAAAAAA
AAAAAAA

Human Arf1 mRNA sequence - var2 (public gi: 30583624) (SEQ ID NO: 326)

ATGGGGAACATCTTCGCCAACCTCTTCAAGGGCCTTTTTGGCAAAAAAGAAATGCGCATCCTCATGGTGG
GCCTGGATGCTGCAGGGAAGACCACGATCCTCTACAAGCTTAAGCTGGGTGAGATCGTGACCACCATTCC
CACCATAGGCTTCAACGTGGAAACCGTGGAGTACAAGAACATCAGCTTCACTGTGTGGGACGTGGGTGGC
CAGGACAAGATCCGGCCCCTGTGGCGCCACTACTTCCAGAACACACAAGGCCTGATCTTCGTGGTGGACA
GCAATGACAGAGAGCGTGTGAACGAGGCCCGTGAGGAGCTCATGAGGATGCTGGCCGAGGACGAGCTCCG
GGATGCTGTCCTCCTGGTGTTCGCCAACAAGCAGGACCTCCCCAACGCCATGAATGCGGCCGAGATCACA
GACAAGCTGGGGCTGCACTCACTACGCCACAGGAACTGGTACATTCAGGCCACCTGCGCCACCAGCGGCG
ACGGGCTCTATGAAGGACTGGACTGGCTGTCCAATCAGCTCCGGAACCAGAAGTAG

Human Arf1 mRNA sequence - var3 (public gi: 34527605) (SEQ ID NO: 327)

AAAACCAACGCCTGGCTCGGAGCAGCAGCCTCTGAGGTGTCCCTGGCCAGTGTCCTTCCACCTGTCCACA
AGCATGGGGAACATCTTCGCCAACCTCTTCAAGGGCCTTTTTGGCAAAAAAGAAATGCGCATCCTCATGG
TGGGCCTGGATGCTGCAGGGAAGACCACGATCCTCTACAAGCTTAAGCTGGGTGAGATCGTGACCACCAT
TCCCACCATAGGCTTCAACGTGGAAACCGTGGAGTACAAGAACATCAGCTTCACTGTGTGGGACGTGGGT
GGCCAGGACAAGATCCGGCCCCTGTGGCGCCACTACTTCCAGAACACACAAGGCCTGATCTTCGTGGTGG
ACAGCAATGACAGAGAGCGTGTGAACGAGGCCCGTGAGGAGCTCATGAGGATGCTGGCCGAGGACGAGCT
CCGGGATGCTGTCCTCCTGGTGTTCGCCAACAAGCAGGACCTCCCCAACGCCATGAATGCGGCCGAGATC
ACAGACAAGCTGGGGCTGCACTCACTACGCCACAGGAACTGGTACATTCAGGCCACCTGTGCCACCAGCG
GCGACGGGCTCTATGAAGGACTGGACTGGCTGTCCAATCAGCTCCGGAACCAGAAGTGAACGCGACCCCC
CTCCCTCTCACTCCTCTTGCCCTCTGCTTTACTCTCATGTGGCAAACGTGCGGCTCGTGGTGTGAGTGCC
AGAAGCTGCCTCCGTGGTTTGGTCACCGTGTGCATCGCACCGTGCTGTAAATGTGGCAGACGCAGCCTGC
GGCCAGGCTTTTTATTTAATGTAAATAGTTTTTGTTTCCAATGAGGCAGTTTCTGGTACTCCTATGCAAT
ATTACTCAGCTTTTTTATTGTAAAAAGAAAAATCAACTCACTGTTCAGTGCTGAGAGGGGATGTAGGCCC
ATGGGCACCTGGCCTCCAGGAGTCGCTGTGTTGGGAGAGCCGGCCACGCCCTTGGCTTTAGAGCTGTGTT
GAAATCCATTTTGGTGGTTGGTTTTTAACCCAAACTCAGTGCATTTTTTAAAATAGTTAAGAATCCAAGT
CGAGAACACTTGAACACACAGAAGGGAGACCCCGCCTAGCATAGATTTGCAGTTACGGCCTGGATGCCAG
TCGCCAGCCCAGCTGTTCCCCTCGGGAACATGAGGTGGTGGTGGCGCAGCAGACTGCGATCAATTCTGCA
TGGTCACAGTAGAGATCCCCGCAACTCGCTTGTCCTTGGGTCACCCTGCATTCCATAGCCATGTGCTTGT

Figure 36 part - 1

CCCTGTGCTCCCACGGTTCCCAGGGGCCAGGCTGGGAGCCCACAGCCACCCCACTATGCCGCAGGCCGCC
CTACCCACCTTCAGGCAGCCTATGGGACGCAGGGCCCCATCTGTCCCTCGGTCGCCGTGTGGCCAGAGTG
GGTCCGTCGTCCCCAACACTCGTGCTCGCTCAGACACTTCGGCAGGATGTCTGGGGCCTCACCAGCAGGA
GCGCGTGCAAGCCGGGCAGGCGGTCCACCTAGACCCACAGCCCCTCGGGAGCACCCCACCTCTGTGTGTG
ATGTAGCTTTCTCTCCCTCAGCCTGCAAGGGTCCGATTTGCCATCGAAAAAGACAACCTCTACTTTTTTC
TTTTGTATTTTGATAAACACTGAAGCTGGAGCTGTTAAATTTATCTTGGGGAAACCTCAGAACTGGTCTA
TTTGGTGTCGTGGAACCTCTTACTGCTTTCAATACACGATTAGTAATCAACTGTTTTGTATACTTGTTTT
CAGTTTTCATTTCGACAAACAAGCACTGTAATTATAGCTATTAGAATAAAATCTCTTAACTATTT

Human Arf1 mRNA sequence - var4 (public gi: 6995997) (SEQ ID NO: 328)

GCAAAACCAACGCCTGGCTCGGAGCAGCAGCCTCTGAGGTGTCCCTGGCCAGTGTCCTTCCACCTGTCCA
CAAGCATGGGGAACATCTTCGCCAACCTCTTCAAGGGCCTTTTTGGCAAAAAAGAAATGCGCATCCTCAT
GGTGGGCCTGGATGCTGCAGGGAAGACCACGATCCTCTACAAGCTTAAGCTGGGTGAGATCGTGACCACC
ATTCCCACCATAGGCTTCAACGTGGAAACCGTGGAGTACAAGAACATCAGCTTCACTGTGTGGGACGTGG
GTGGCCAGGACAAGATCCGGCCCCTGTGGCGCCACTACTTCCAGAACACACAAGGCCTGATCTTCGTGGT
GGACAGCAATGACAGAGAGCGTGTGAACGAGGCCCGTGAGGAGCTCATGAGGATGCTGGCCGAGGACGAG
CTCCGGGATGCTGTCCTCCTGGTGTTCGCCAACAAGCAGGACCTCCCCAACGCCATGAATGCGGCCGAGA
TCACAGACAAGCTGGGGCTGCACTCACTACGCCACAGGAACTGGTACATTCAGGCCACCTGCGCCACCAG
CGGCGACGGGCTCTATGAAGGACTGGACTGGCTGTCCAATCAGCTCCGGAACCAGAAGTGAACGCGACCC
CCCTCCCTCTCACTCCTCTTGCCCTCTGCTTTACTCTCATGTGGCAAACGTGCGGCTCGTGGTGTGAGTG
CCAGAAGCTGCCTCCGTGGTTTGGTCACCGTGTGCATCGCACCGTGCTGTAAATGTGGCAGACGCAGCCT
GCGGCCAGGCTTTTTATTTAATGTAAATAGTTTTTGTTTCCAATGAGGCAGTTTCTGGTACTCCTATGCA
ATATTACTCAGCTTTTTTTATTGTAAAAAGAAAAATCAACTCACTGTTCAGTGCTGAGAGGGGATGTAGG
CCCATGGGCACCTGGCCTCCAGGAGTCGCTGTGTTGGGAGAGCCGGCCACGCCCTTGGCTTAGAGCTGTG
TTGAAATCCATTTTGGTGGTTGGTTTTAACCCAAACTCAGTGCATTTTTTAAAATAGTTAAGAATCCAAG
TCGAGAACACTTGAACACACAGAAGGGAGACCCCGCCTAGCATAGATTTGCAGTTACGGCCTGGATGCCA
GTCGCCAGCCCAGCTGTTCCCCTCGGGAACATGAGGTGGTGGTGGCGCAGCAGACTGCGATCAATTCTGC
ATGGTCACAGTAGAGATCCCCGCAACTCGCTTGTCCTTGGGTCACCCTGCATTCCATAGCCATGTGCTTG
TCCCTGTGCTCCCACGGTTCCCAGGGGCCAGGCTGGGAGCCCACAGCCACCCCACTATGCCGCAGGCCGC
CCTACCCACCTTCAGGCAGCCTATGGGACGCAGGCCCCATCTGTCCCTCGGTCGCCGTGTGGCCAGAGTG
GGGTCCGTCGTCCCCAACACTCGTGCTCGCTCAGACACTTTGGCAGGATGTCTGGGGCCTCACCAGCAGG
AGCGCGTGCAAGCCGGGCAGGCGGTCCACCTAGACCCACAGCCCCTCGGGAGCACCCCACCTCTGTGTGT
GATGTAGCTTTCTCTCCCTCAGCCTGCAAGGGTCCGATTTGCCATCGAAAAAGACAACCTCTACTTTTTT

Human Arf1 mRNA sequence - var5 (public gi: 7020834) (SEQ ID NO: 329)

CCTTACCCGGCGTGCCCCGCGCCCGGAGGCGCTGACGTGGCCGCCGTCAGAGCCGCCATCTTGTGGGAGC
AAAACCAACGCCTGGCTCGGAGCAGCAGCCTCTGAGGTGTCCCTGGCCAGTGTCCTTCCACCTGTCCACA
AGCATGGGGAACATCTTCGCCAACCTCTTCAAGGGCCTTTTTGGCAAAAAAGAAATGCGCATCCTCATGG
TGGGCCTGGATGCTGCAGGGAAGACCACGATCCTCTACAAGCTTAAGCTGGGTGAGATCGTGACCACCAT
TCCCACCATAGGCTTCAACGTGGAAACCGTGGAGTACAAGAACATCAGCTTCACTGTGTGGGACGTGGGT
GGCCAGGACAAGATCCGGCCCCTGTGGCGCCACTACTTCCAGAACACACAAGGCCTGATCTTCGTGGTGG
ACAGCAATGACAGAGAGCGTGTGAACGAGGCCCGTGAGGAGCTCATGAGGATGCTGGCCGAGGACGAGCT
CCGGGATGCTGTCCTCCTGGTGTTCGCCAACAAGCAGGACCTCCCCAACGCCATGAATGCGGCCGAGATC
ACAGACAAGCTGGGGCTGCACTCACTACGCCACAGGAACTGGTACATTCAGGCCACCTGCGCCACCAGCG
GCGACGGGCTCTATGAAGGACTGGACTGGCTGTCCAATCAGCTCCGGAACCAGAAGTGAACGCGACCCCC
CTCCCTCTCACTCCTCTTGCCCTCTGCTTTACTCTCATGTGGCAAACGTGCGGCTCGTGGTGTGAGTGCC
AGAAGCTGCCTCCGTGGTTTGGTCACCGTGTGCATCGCACCGTGCTGTAAATGTGGCAGACGCAGCCTGC
GGCCAGGCTTTTTATTTAATGTAAATAGTTTTTGTTTCCAATGAGGCAGTTTCTGGTACTCCTATGCAAT
ATTACTCAGCTTTTTTTATTGTAAAAAGAAAAATCAACTCACTGTTCAGTGCTGAGAGGGGATGTAGGCC
CATGGGCACCTGGCCTCCAGGAGTCGCTGTGTTGGGAGAGCCGGCCACGCCCTTGGCTTTAGAGCTGTGT
TGAAATCCATTTTGGTGGTTGGTTTTTAACCCAAACTCAGTGCATTTTTTAAAATAGTTAAGAATCCAAG
TCGAGAACACTTGAACACACAGAAGGGAGACCCCGCCTAGCATAGATTTGCAGTTACGGCCTGGATGCCA
GTCGCCAGCCCAGCTGTTCCCCTCGGGAACATGAGGTGGTGGTGGCGCAGCAGACTGCGATCAATTCTGC
ATGGTCACAGTAGAGATCCCCGCAACTCGCTTGTCCTTGGGTCACCCTGCATTCCATAGCCATGTGCTTG
TCCCTGTGCTCCCACGGTTCCCAGGGGCCAGGCTGGGAGCCCACAGCCACCCCACTATGCCGCAGGCCGC
CCTACCCACCTTCAGGCAGCCTATGGGACGCAGGGCCCCATCTGTCCCTCGGTCGCCGTGTGGCCAGAGT
GGGTCCGTCGTCCCCAACACTCGTGCTCGCTCAGACACTTTGGCAGGATGTCTGGGGCCTCACCAGCAGG
AGCGCGTGCAAGCCGGGCAGGCGGTCCACCTAGACCCACAGCCCCTCGGGAGCACCCCACCTCTGTGTGT
GATGTAGCTTTCTCTCCCTCAGCCTGCAAGGGTCCGATTTGCCATCGAAAAAGACAACCTCTACTTTTTT

Figure 36 part - 2

CTTTTGTATTTTGATAAACACTGAAGCTGGAGCTGTTAAATTTATCTTGGGGAAACCTCAGAACTGGTCT
ATTTGGTGTCGTGGAACCTCTTACTGCTTTCAATACACGATTAGTAATCAACTGTTTTGTATACTTGTTT
TCAGTTTTCATTTCGACAAACAAGCACTGTAATTATAGCTATTAGAATAAAATCTCTTAACTATTAAAAA
AAAAAAAAAAAAAAAAAAAA

Human Arf1 mRNA sequence - var6 (public gi: 10435849) (SEQ ID NO: 330)

AGCTCAGTGCCCAGCATGTCTGTGGTGAGTGTGTAGTTCAGGAAGTGAACTGGCAAAACTGAGTATCACC
CTCTCTTCCTGGGTTCTTGCCACTCCCCTGAAAACCAGGGTAGCATTGTCACATCAGATAGCTCCGCTAC
GTGTGCGCTGACCATGCTGAGATGGGCACTGTGGACTCAGCCTCTGGTCATTGCTGGAACCAGCGGCCTC
CATGTGAGGTACAGGGGAACGCACTGCTAGCAGATGGTTGGGATGTGGACACTCGTCCTGCCCTCTTGGC
TTGGTGCTGTGCCATCGCACAGTCATTCGCTGTTTAGCATGCATGGGAGAGAGTGAAGCACAAGGGCCCA
GGCCCCTGGGAGTGCCTGCCCTCAATTTGGAAGAGCCCTTGGGCACAGCATAGGCGCCTGGCAGAATTGG
ACTGGGCCATGATCCAGGGCATTGGGACCTCACCTAGGAGTTGGGGTTCTGGTCAGAAGCCCTGTGGAGA
CAGGGTCTCCCCTGTGGGCACCAAACTGACCTCAAACTGCTGGTTCTTTGGCCCTGGGGACAGGGCTGGT
TGAAGTACTCTCCCGGCAGCTGTCACCTGCAGGGAGAGGTGGGGGTAGGGGTGCTGTGTTTCTTAGCTGT
TCCTCGTTGCAGTGTTAAATCCCTGCAGGTTCCTTATTCTCAGCTTGTGTTGTGAGTTTCAGTGTTGGGG
GCTAATGTGGGTTTGCGTTTTTGGTCTTGGTTTTCCCAGTGGCCAGTCCATCAGCCACTGCACTGGGGGC
CAGGTAGAGGCCAACTGCACCCTGCCTGCCAGAGTAGAAATACTGGTAGGCCCCAGGCTCTGCTGCCCCT
TCCATGTCCTTGTGTAAGCATCCATGGACAAAGCTGACTCACGGGGTGTGCACAGCTGCAGGGAGGCCAG
GAAACAGGGGTTTTATTCTAGAGGGCCTTGTGCTCAGTGACAGACCAGAGTCCCATCACTGAGAGAGCAG
GGCTGGGGCAGCACAAAGGACTGGATAGCATTTGCCATGATGCCATGTGCACAGCCAGTGCAAGTCCTTC
ATTGTAGCTGTGGTCAGAGGTCATGAGACACTGCCTTCAGCAGCCCTGGGAGTCCACCTGGTGTGTGCTT
AGAGCTGTGCATCTGCAGATTTCAGAAGGACTTACGTTTGGTGAGGTGCTTTGAAGTAACACTTCACAAA
TACCAAGAAGCAAGAAATACACAAATAAGCAGGTAATGGTTCTTTGGTGTTTACATTAGCTAGTGGGCAA
CGGTTCTTTGGTGTTCACATTAGCTATAGTCCCAGAACTCAGTCCATGAGGTGGAATCACAAAAATGGAA
TTCATTTCTGGCTGTCAGTACACAAACTGATTTAAGATATCACCTTGAATTTTAAGCTGACAAACAGTGA
TCTAAACTGAATTTCACTGATTGCCCCACCTGAAAGTCAGACCTGATAGATAATGCCCTCCCTTAACTCA
AGGCCAGCAGCAGATGTGTTAGAGGGGACCCTTGTGCCTCGCAGCCCTCATCTCCTAATGGCTGTGGGGT
CACTGTGTCGAGTTGTAATGCCTAATGAGCTCCTCTAAAAACATCCTGAAACTTGTGTAAAAAAACAGCA
GACTCCCAGTGGAACTCGCCTTCAGATGCAGCCCAGAATAAGAGTTCTAGAATGTGTGTGCCATCCTTTT
GTCTCAATCTGCATGATTGCAAGTCTCTTCAACATGATTGGGTGCGTGGAGTGTCTCGGTCATGTGTCTT
CCCCTCTGAGCATGCCTTTTGATTCGCACCTGTGTCACAATTGTGCCAGCCTGTGAGATGTGTCTGCCTG
TCACCAGTATCGGCACATTTAGTTTTCCCTTTACGTGAGTTTTGGTAAAATAGTGACAAAATGTAATGCA
GTGCTCAGTCACAGAAAAATGTCAGGCCTACAGAAATGGAGCATTTGGCTGGTGGGTAGCGTGATGACCA
TAGGCTTTATTTGGCTGGTGTGGTAAACAAGCAGCAGCTTGTGCAGGTGAGAATAAATGGCCATATTGCA
TTTCATTTTAAGGACTCCCTTAAAATGAAAATCTTCGTGTGGGACATGAACACAGGCTTTCACGAAATTG
ATCATCTACACTATATGTATGACTGTTGAAAGGCTGTTGTTCCTCAGAAATTCTTAAAATGTTATGTAAT
GTACATGAGTCCCTTCAGGAAGTCATCAGCTTTGTTCAGTTTCCTCAGATTAGATAGTAAAACTGAGATT
ATGAACTATAAAGATGTGTGTAATTTATCTGTCAGTGAACTTGACTTTAATAAAAGCTTTTTGAAAAAGA
ACTCTGGGTGGGGTGCATTGGCTCACACACATAGTCCCAACTACTGTGGAGGTCAGGGCAGGAGGATCAC
TGGAGCCCAAGAGTTCAAGATCAGCCTGGGCAGGATAGCGAGACCCTGTCTATAGAAAATATTAAAAATC
AGCTAGGCATGGTGGCTTGCCCTTGCATTCCCTGCCACTTGGGAGGCTGAGGTGGGAGGTTCGCTTGAGC
CCAGGAGCTCAAGGCTGCAATGGGCTGTGATCGAACCACTGAATTCCAACCTGGGTGACAGAGTGAGGCC
CTGTCTCAAAAAGAGAACTCTCGATGTCACTGGCTTTCCATGTAAGCAGAGCACATCATGTGAGCCCCAT
TCGTGGATGTCAGTCAGCAGAACAGAATCTTGGACCTGGAGCTTGTTTGTCCTGTGCTAGAGGTTGGAGG
TGTCTCTGTCTTTCTGTTGGTTCCTGTCAGTTCAGGTCACTTAGAGATTCTGTTACATACACCAGCTCTG
ACAGGTTGGGGGAGATGATCAACCTTCCGCCTGCGCCTGTTCCCTTCCCTGACTCATGCCAAAGTATCCC
TGAGATCTGCAAGGGACCGAGGACAGTACTGGCTGGTGGTCTGGGTACAGGCCACAGAGGCATCTGGACC
CCATGTGCATCTGGACCAGTTTGGTTGGATCCATTCATGGACACAAAACGGATGTGAACTCACAGAGCTA
CATTTTCTCCCTGCCCCTGTTCAGGCACAGTGAGGTGTCGGGGAATGTAGCTGCCAGAGTTGACTGTCCC
GTTCTTTGGTGTAATGCCTGAAGGCCACCTTTACCATTGGTCTGTGGTCCTCACTGAAGAAAGAAACATT
CTTCCTAAAAGACTTTTTTTCCTCAGAGTTGGAGCCCACAGCGTGGTCAGGAAAGAGAAGTAGCCACTGG
TGGCTCCTGGCATCCTCCTGCTGGGCAGCCCCTTCTCAAAGTGTGAGGGGTCCCCTTGTGTACAAGCAGG
AAGGCTCTGAGAAAGTCAGGTTTGCTCCTACCACAGGATAATTCCGATGAACCTGAAAAGCGGGTTTTGG
CTTGTGTGCAGGGACTCTGGTGGAAGAAAGGGTGACAGCACCTGGCCTGGGCATGACACAAGTTAGGACC
CGTACCAAGAGGCCCTGGAATTGAGGGTGGGGGTTGCTGTGGACTCTTTCTCCCTCTTAGGAAACTCTAT
TGGGTCTCCATCTGTCACAGAAGCAGTAAATGATGTAGGGGCTGCCAGGTATAGGGTCCTGTGGGGATGC
TGGAACATGCCGAGGCAGGACGTGCCAGCCACCCTCTGCCCATATGTGCAGCAGGGCCACAGATGTGCTT
GTCGGTAGGAGAGACCAAGCTGTCTGTGTGCCGATGTCTTGACACCTGAGACTTCAGGTTCACCCATCCT
GGTTCTGCCATTCCATTGCAGGGTGGCTTCCCTCCTTTGGGGACTCTTAACGCTTTGGTCTGTTAAAAAA
AAAAAAAAAAAAAAATCCGGGCGTGGTGGCTCACTCCTGTAATCCCAGCACTTTGGGAGGCCGAGGTGGG
CTGATCATCTGAGGTCAGGGGTTCGAGGCCAGCCCTGACCAACATGGTGAAACCCCGTCTCTACT

Figure 36 part - 3

Human Arf1 mRNA sequence - var7 (public gi: 14714585) (SEQ ID NO: 331)

CAACGCCTGGCTCGGAGCAGCAGCCTCTGAGGTGTCCCTGGCCAGTGTCCTTCCACCTGTCCACAAGCAT
GGGGAACATCTTCGCCAACCTCTTCAAGGGCCTTTTTGGCAAAAAAGAAATGCGCATCCTCATGGTGGGC
CTGGATGCTGCAGGGAAGACCACGATCCTCTACAAGCTTAAGCTGGGTGAGATCGTGACCACCATTCCCA
CCATAGGCTTCAACGTGGAAACCGTGGAGTACAAGAACATCAGCTTCACTGTGTGGGACGTGGGTGGCCA
GGACAAGATCCGGCCCCTGTGGCGCCACTACTTCCAGAACACACAAGGCCTGATCTTCGTGGTGGACAGC
AATGACAGAGAGCGTGTGAACGAGGCCCGTGAGGAGCTCATGAGGATGCTGGCCGAGGACGAGCTCCGGG
ATGCTGTCCTCCTGGTGTTCGCCAACAAGCAGGACCTCCCCAACGCCATGAATGCGGCCGAGATCACAGA
CAAGCTGGGGCTGCACTCACTACGCCACAGGAACTGGTACATTCAGGCCACCTGCGCCACCAGCGGCGAC
GGGCTCTATGAAGGACTGGACTGGCTGTCCAATCAGCTCCGGAACCAGAAGTGAACGCGACCCCCCTCCC
TCTCACTCCTCTTGCCCTCTGCTTTACTCTCATGTGGCAAACGTGCGGCTCGTGGTGTGAGTGCCAGAAG
CTGCCTCCGTGGTTTGGTCACCGTGTGCATCGCACCGTGCTGTAAATGTGGCAGACGCAGCCTGCGGCCA
GGCTTTTTATTTAATGTAAATAGTTTTTGTTTCCAATGAGGCAGTTTCTGGTACTCCTATGCAATATTAC
TCAGCTTTTTTTATTGTAAAAAGAAAAATCAACTCACTGTTCAGTGCTGAGAGGGGATGTAGGCCCATGG
GCACCTGGCCTCCAGGAGTCGCTGTGTTGGGAGAGCCGGCCACGCCCTTGGCTTTAGAGCTGTGTTGAAA
TCCATTTTGGTGGTTGGTTTTTAACCCAAACTCAGTGCATTTTTTAAAATAGTTAAGAATCCAAGTCGAG
AACACTTGAACACACAGAAGGGAGACCCCGCCTAGCATAGATTTGCAGTTACGGCCTGGATGCCAGTCGC
CAGCCCAGCTGTTCCCCTCGGGAACATGAGGTGGTGGCGCAGCAGACTGCGATCAATTCTGCATGGT
CACAGTAGAGATCCCCGCAACTCGCTTGTCCTTGGGTCACCCTGCATTCCATAGCCATGTGCTTGTCCCT
GTGCTCCCACGGTTCCCAGGGGCCAGGCTGGGAGCCCACAGCCACCCCACTATGCCGCAGGCCGCCCTAC
CCACCTTCAGGCAGCCTATGGGACGCAGGGCCCCATCTGTCCCTCGGTCGCCGTGTGGCCAGAGTGGGTC
CGTCGTCCCCAACACTCGTGCTCGCTCAGACACTTTGGCAGGATGTCTGGGGCCTCACCAGCAGGAGCGC
GTGCAAGCCGGGCAGGCGGTCCACCTAGACCCACAGCCCCTCGGGAGCACCCCACCTCTGTGTGTGATGT
AGCTTTCTCTCCCTCAGCCTGCAAGGGTCCGATTTGCCATCGAAAAAGACAACCTCTACTTTTTTCTTTT
GTATTTTGATAAACACTGAAGCTGGAGCTGTTAAATTTATCTTGGGGAAACCTCAGAACTGGTCTATTTG
GTGTCGTGGAACCTCTTACTGCTTTCAATACACGATTAGTAATCAACTGTTTTGTATACTTGTTTTCAGT
TTTCATTTCGACAAACAAGCACTGTAATTATAGCTATTAGAATAAAATCTCTTAACTATTAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAA

Human Arf1 mRNA sequence - var8 (public gi: 33872952) (SEQ ID NO: 332)

GTCCAATCAGCTCCGGAACCAGAAGTGAACGCGACCCCCCTCCCTCTCACTCCTCTTGCCCTCTGCTTTA
CTCTCATGTGGCAAACGTGCGGCTCGTGGTGTGAGTGCCAGAAGCTGCCTCCGTGGTTTGGTCACCGTGT
GCATCGCACCGTGCTGTAAATGTGGCAGACGCAGCCTGCGGCCAGGCTTTTTATTTAATGTAAATAGTTT
TTGTTTCCAATGAGGCAGTTTCTGGTACTCCTATGCAATATTACTCAGCTTTTTTTATTGTAAAAAGAAA
AATCAACTCACTGTTCAGTGCTGAGAGGGGATGTAGGCCCATGGGCACCTGGCCTCCAGGAGTCGCTGTG
TTGGGAGAGCCGGCCACGCCCTTGGCTTTAGAGCTGTGTTGAAATCCATTTTGGTGGTTGGTTTTTAACC
CAAACTCAGTGCATTTTTTAAAATAGTTAAGAATCCAAGTCGAGAACACTTGAACACACAGAAGGGAGAC
CCCGCCTAGCATAGATTTGCAGTTACGGCCTGGATGCCAGTCGCCAGCCCAGCTGTTCCCCTCGGGAACA
TGAGGTGGTGGTGGCGCAGCAGACTGCGATCAATTCTGCATGGTCACAGTAGAGATCCCCGCAACTCGCT
TGTCCTTGGGTCACCCTGCATTCCATAGCCATGTGCTTGTCCCTGTGCTCCCACGGTTCCCAGGGGCCAG
GCTGGGAGCCCACAGCCACCCCACTATGCCGCAGGCCGCCCTACCCACCTTCAGGCAGCCTATGGGACGC
AGGGCCCCATCTGTCCCTCGGTCGCCGTGTGGCCAGAGTGGGTCCGTCGTCCCCAACACTCGTGCTCGCT
CAGACACTTTGGCAGGATGTCTGGGGCCTCACCAGCAGGAGCGCGTGCAAGCCGGGCAGGCGGTCCACCT
AGACCCACAGCCCCTCGGGAGCACCCCACCTCTGTGTGTGATGTAGCTTTCTCTCCCTCAGCCTGCAAGG
GTCCGATTTGCCATCGAAAAAGACAACCTCTACTTTTTTCTTTTGTATTTTGATAAACACTGAAGCTGGA
GCTGTTAAATTTATCTTGGGGAAACCTCAGAACTGGTCTATTTGGTGTCGTGGAACCTCTTACTGCTTTC
AATACACGATTAGTAATCAACTGTTTTGTATACTTGTTTTCAGTTTTCATTTCGACAAACAAGCACTGTA
ATTATAGCTATTAGAATAAAATCTCTTAACTATTAAAAAAAAAAAAAAAAAA

Human Arf1 mRNA sequence - var9 (public gi: 15030200) (SEQ ID NO: 333)

GAGCCGCCATCTTGTGGGAGCAAAACCAACGCCTGGCTCGGAGCAGCAGCCTCTGAGGTGTCCCTGGCCA
GTGTCCTTCCACCTGTCCACAAGCATGGGGAACATCTTCGCCAACCTCTTCAAGGGCCTTTTTGGCAAAA
AAGAAATGCGCATCCTCATGGTGGGCCTGGATGCTGCAGGGAAGACCACGATCCTCTACAAGCTTAAGCT
GGGTGAGATCGTGACCACCATTCCCACCATAGGCTTCAACGTGGAAACCGTGGAGTACAAGAACATCAGC
TTCACTGTGTGGGACGTGGGTGGCCAGGACAAGATCCGGCCCCTGTGGCGCCACTACTTCCAGAACACAC
AAGGCCTGATCTTCGTGGTGGACAGCAATGACAGAGAGCGTGTGAACGAGGCCCGTGAGGAGCTCATGAG
GATGCTGGCCGAGGACGAGCTCCGGGATGCTGTCCTCCTGGTGTTCGCCAACAAGCAGGACCTCCCCAAC
GCCATGAATGCGGCCGAGATCACAGACAAGCTGGGGCTGCACTCACTACGCCACAGGAACTGGTACATTC
AGGCCACCTGCGCCACCAGCGGCGACGGGCTCTATGAAGGACTGGACTGGCTGTCCAATCAGCTCCGGAA
CCAGAAGTGAACGCGACCCCCCTCCCTCTCACTCCTCTTGCCCTCTGCTTTACTCTCATGTGGCAAACGT
GCGGCTCGTGGTGTGAGTGCCAGAAGCTGCCTCCGTGGTTTGGTCACCGTGTGCATCGCACCGTGCTGTA
AATGTGGCAGACGCAGCCTGCGGCCAGGCTTTTTATTTAATGTAAATAGTTTTTGTTTCCAATGAGGCAG

Figure 36 part - 4

TTTCTGGTACTCCTATGCAATATTACTCAGCTTTTTTTATTGTAAAAAGAAAAATCAACTCACTGTTCAG
TGCTGAGAGGGGATGTAGGCCCATGGGCACCTGGCCTCCAGGAGTCGCTGTGTTGGGAGAGCCGGCCACG
CCCTTGGCTTTAGAGCTGTGTTGAAATCCATTTTGGTGGTTGGTTTTTAACCCAAACTCAGTGCATTTTT
TAAAATAGTTAAGAATCCAAGTCGAGAACACTTGAACACACAGAAGGGAGACCCCGCCTAGCATAGATTT
GCAGTTACGGCCTGGATGCCAGTCGCCAGCCCAGCTGTTCCCCTCGGGAACATGAGGTGGTGGTGGCGCA
GCAGACTGCGATCAATTCTGCATGGTCACAGTAGAGATCCCCGCAACTCGCTTGTCCTTGGGTCACCCTG
CATTCCATAGCCATGTGCTTGTCCCTGTGCTCCCACGGTTCCCAGGGGCCAGGCTGGGAGCCCACAGCCA
CCCCACTATGCCGCAGGCCGCCCTACCCACCTTCAGGCAGCCTATGGGACGCAGGGCCCCATCTGTCCCT
CGGTCGCCGTGTGGCCAGAGTGGGTCCGTCGTCCCCAACACTCGTGCTCGCTCAGACACTTTGGCAGGAT
GTCTGGGGCCTCACCAGCAGGAGCGCGTGCAAGCCGGGCAGGCGGTCCACCTAGACCCACAGCCCCTCGG
GAGCACCCCACCTCTGTGTGTGATGTAGCTTTCTCTCCCTCAGCCTGCAAGGGTCCGATTTGCCATCGAA
AAAGACAACCTCTACTTTTTTTCTTTTGTATTTTGATAAACACTGAAGCTGGAGCTGTTAAATTTATCTTG
GGGAAACCTCAGAACTGGTCTATTTGGTGTCGTGGAACCTCTTACTGCTTTCAATACACGATTAGTAATC
AACTGTTTTGTATACTTGTTTTCAGTTTTCATTTCGACAAACAAGCACTGTAATTATAGCTATTAGAATA
AAATCTCTTAACTATTAAAAAAAAAAAAAAAAAA

Human Arf1 mRNA sequence - var10 (public gi: 16553846) (SEQ ID NO: 334)

GTGGGAGCAAAACCAACGCCTGGCTCGGAGCAGCAGCCTCTGAGGTGTCCCTGGCCAGTGTCCTTCCACC
TGTCCACAAGCATGGGGAACATCTTCGCCAACCTCTTCAAGGGCCTTTTTGGCAAAAAAGAAATGCGCAT
CCTCATGGTGGGCCTGGATGCTGCAGGGAAGACCACGATCCTCTACAAGCTTAAGCTGGGTGAGATCGTG
ACCACCATTCCCACCATAGGCTTCAACGTGGAAACCGTGGAGTACAAGAACATCAGCTTCACTGTGTGGG
ACGTGGGTGGCCAGGACAAGATCCGGCCCCTGTGGCGCCACTACTTCCAGAACACACAAGGCCTGATCTT
CGTGGTGGACAGCAATGACAGAGAGCGTGTGAACGAGGCCCGTGAGGAGCTCATGAGGATGCTGGCCGAG
GACGAGCTCCGGGATGCTGTCCTCCTGGTGTTCGCCAACAAGCAGGACCTCCCCAACGCCATGAATGCGG
CCGAGATCACAGACAAGCTGGGGCTGCACTCACTACGCCACAGGAACTGGTACATTCAGGCCACCTGCGC
CACCAGCGGCGACGGGCTCTATGAAGGACTGGACTGGCTGTCCAATCAGCTCCGGAACCAGAAGTGAACG
CGACCCCCCTCCCTCTCACTCCTCTTGCCCTCTGCTTTACTCTCATGTGGCAAACGTGCGGCTCGTGGTG
TGAGTGCCAGAAGCTGCCTCCGTGGTTTGGTCACCGTGTGCATCGCACCGTGCTGTAAATGTGGCAGACG
CAGCCTGCGGCCAGGCTTTTTATTTAATGTAAATAGTTTTTGTTTCCAATGAGGCAGTTTCTGGTACTCC
TATGCAATATTACTCAGCTTTTTTTATTGTAAAAAGAAAAATCAACTCACTGTTCAGTGCTGAGAGGGGA
TGTAGGCCCATGGGCACCTGGCCTCCAGGAGTCGCTGTGTTGGGAGAGCCGGCCACGCCCTTGGCTTTAG
AGCTGTGTTGAAATCCATTTTGGTGGTTGGTTTTTAACCCAAACTCAGTGCATTTTTTAAAATAGTTAAG
AATCCAAGTCGAGAACACTTGAACACACAGAAGGGAGACCCCGCCTAGCATAGATTTGCAGTTACGGCCT
GGATGCCAGTCGCCAGCCCAGCTGTTCCCCTCGGGAACATGAGGTGGTGGTGGCGCAGCAGACTGCGATC
AATTCTGCATGGTCACAGTAGAGATCCCCGCAACTCGCTTGTCCTTGGGTCACCCTGCATTCCATAGCCA
TGTGCTTGTCCCTGTGCTCCCACGGTTCCCAGGGGCCAGGCTGGGAGCCCACAGCCACCCCACTATGCCG
CAGGCCGTCCTACCCACCTTCAGGCAGCCTATGGGACGCAGGGCCCCATCTGTCCCTCGGTCGCCGTGTG
GCCAGAGTGGGTCCGTCGTCCCCAACACTCGTGCTCGCTCAGACACTTTGGCAGGATGTCTGGGGCCTCA
CCAGCAGGAGCGCGTGCAAGCCGGGCAGGCGGTCCACCTAGACCCACAGCCCCTCGGGAGCACCCCACCT
CTGTGTGTGATGTAGCTTTCTCTCCCTCAGCCTGCAAGGGTCCGATTTGCCATCGAAAAAGACAACCTCT
ACTTTTTTCTTTTGTATTTTGATAAACACTGAAGCTGGAGCTGTTAAATTTATCTTGGGGAAACCTCAGA
ACTGGTCTATTTGGTGTCGTGGAACCTCTTACTGCTTTCAATACACGATTAGTAATCAACTGTTTTGTAT
ACTTGTTTTCAGTTTTCATTTCGACAAACAAGCACTGTAATTATAGCTATTAGAATAAAATCTCTTAACT
ATT

Human Arf1 mRNA sequence - var11 (public gi: 16553799) (SEQ ID NO: 335)

AACCAACGCCTGGCTCGGAGCAGCAGCCTCTGAGGTGTCCCTGGCCAGTGTCCTTCCACCTGTCCACAAG
CATGGGGAACATCTTCGCCAACCTCTTCAAGGGCCTTTTTGGCAAAAAAGAAATGCGCATCCTCATGGTG
GGCCTGGATGCTGCAGGGAAGACCACGATCCTCTACAAGCTTAAGCTGGGTGAGATCGTGACCACCATTC
CCACCATAGGCTTCAACGTGGAAACCGTGGAGTACAAGAACATCAGCTTCACTGTGTGGGACGTGGGTGG
CCAGGACAAGATCCGGCCCCTGTGGCGCCACTACTTCCAGAACACACAAGGCCTGATCTTCGTGGTGGAC
AGCAATGACAGAGAGCGTGTGAACGAGGCCCGTGAGGAGCTCATGAGGATGCTGGCCGAGGACGAGCTCC
GGGATGCTGTCCTCCTGGTGTTCGCCAACAAGCAGGACCTCCCCAACGCCATGAATGCGGCCGAGATCAC
AGACAAGCTGGGGCTGCACTCACTACGCCACAGGAACTGGTACATTCAGGCCACCTGCGCCACCAGCGGC
GACGGGCTCTATGAAGGACTGGACTGGCTGTCCAATCAGCTCCGGAACCAGAAGTGAACGCGACCCCCCT
CCCTCTCACTCCTCTTGCCCTCTGCTTTACTCTCATGTGGCAAACGTGCGGCTCGTGGTGTGAGTGCCAG
AAGCTGCCTCCGTGGTTTGGTCACCGTGTGCATCGCACCGTGCTGTAAATGTGGCAGACGCAGCCTGCGG
CCAGGCTTTTTATTTAATGTAAATAGTTTTTGTTTCCAATGAGGCAGTTTCTGGTACTCCTATGCAATAT
TACTCAGCTTTTTTTATTGTAAAAAGAAAAATCAACTCACTGTTCAGTGCTGAGAGGGGATGTAGGCCCA
TGGGCACCTGGCCTCCAGGAGTCGCTGTGTTGGGAGAGCCGGCCACGCCCTTGGCTTTAGAGCTGTGTTG
AAATCCATTTTGGTGGTTGGTTTTTAACCCAAACTCAGTGCATTTTTTAAAATAGTTAAGAATCCAAGTC
GAGAACACTTGAACACACAGAAGGGAGACCCCGCCTAGCATAGATTTGCAGTTACGGCCTGGATGCCAGT

Figure 36 part - 5

CGCCAGCCCAGCTGTTCCCCTCGGGAACATGAGGTGGTGGTGGCGCAGCAGACTGCGATCAATTCTGCAT
GGTCACAGTAGAGATCCCCGCAACTCGCTTGTCCTTGGGTCACCCTGCATTCCATAGCCATGTGCTTGTC
CCTGTGCTCCCACGGTTCCCAGGGGCCAGGCTGGGAGCCCACAGCCACCCCACTATGCCGCAGGCCGCCC
TACCCACCTTCAGGCAGCCTATGGGACGCAGGGCCCCATCTGTCCCTCGGTCGCCGTGTGGCCAGAGTGG
GTCCGTCGTCCCCAACACTCGTGCTCGCTCAGACACTTTGGCAGGATGTCTGGGGCCTCACCAGCAGGAG
CGCGTGCAAGCCGGGCAGGCGGTCCACCTAGACCCACAGCCCCTCGGGAGCACCCCACCTCTGTGTGTGA
TGTAGCTTTCTCTCCCTCAGCCTGCAAGGGTCCGATTTGCCATCGAAAAAGACAACCTCTACTTTTTTCT
TTTGTATTTTGATAAACACTGAAGCTGGAGCTGTTAAATTTATCTTGGGGAAACCTCAGAACTGGTCTAT
TTGGTGTCGTGGAACCTCTTACTGCTTTCAATACACGATTAGTAATC

Human Arf1 mRNA sequence - var12 (public gi: 20147654) (SEQ ID NO: 336)
ATGGGGAACATCTTCGCCAACCTCTTCAAGGGCCTTTTTGGCAAAAAAGAAATGCGCATCCTCATGGTGG
GCCTGGATGCTGCAGGGAAGACCACGATCCTCTACAAGCTTAAGCTGGGTGAGATCGTGACCACCATTCC
CACCATAGGCTTCAACGTGGAAACCGTGGAGTACAAGAACATCAGCTTCACTGTGTGGGACGTGGGTGGC
CAGGACAAGATCCGGCCCCTGTGGCGCCACTACTTCCAGAACACACAAGGCCTGATCTTCGTGGTGGACA
GCAATGACAGAGAGCGTGTGAACGAGGCCCGTGAGGAGCTCATGAGGATGCTGGCCGAGGACGAGCTCCG
GGATGCTGTCCTCCTGGTGTTCGCCAACAAGCAGGACCTCCCCAACGCCATGAATGCGGCCGAGATCACA
GACAAGCTGGGGCTGCACTCACTACGCCACAGGAACTGGTACATTCAGGCCACCTGCGCCACCAGCGGCG
ACGGGCTCTATGAAGGACTGGACTGGCTGTCCAATCAGCTCCGGAACCAGAAGTGA

Human Arf1 mRNA sequence - var13 (public gi: 178163) (SEQ ID NO: 337)
AAACCAACGCCTGGCTCGGAGCAGCAGCCTCTGAGGTGTCCCTGGCCAGTGTCCTTCCACCTGTCCACAA
GCATGGGGAACATCTTCGCCAACCTCTTCAAGGGCCTTTTTGGCAAAAAAGAAATGCGCATCCTCATGGT
GGGCCTGGATGCTGCAGGGAAGACCACGATCCTCTACAAGCTTAAGCTGGGTGAGATCGTGACCACCATT
CCCACCATAGGCTTCAACGTGGAAACCGTGGAGTACAAGAACATCAGCTTCACTGTGTGGGACGTGGGTG
GCCAGGACAAGATCCGGCCCCTGTGGCGCCACTACTTCCAGAACACACAAGGCCTGATCTTCGTGGTGGA
CAGCAATGACAGAGAGCGTGTGAACGAGGCCCGTGAGGAGCTCATGAGGATGCTGGCCGAGGACGAGCTC
CGGGATGCTGTCCTCCTGGTGTTCGCCAACAAGCAGGACCTCCCCAACGCCATGAATGCGGCCGAGATCA
CAGACAAGCTGGGGCTGCACTCACTACGCCACAGGAACTGGTACATTCAGGCCACCTGCGCCACCAGCGG
CGACGGGCTCTATGAAGGACTGGACTGGCTGTCCAATCAGCTCCGGAACCAGAAGTGAACGCGACCCCCC
TCCCTCTCACTCCTCTTGCCCTCTGCTTTACTCTCATGTGGCAAACGTGCGGCTCGTGGTGTGAGTGCCA
GAAGCTGCCTCCGTGGTTTGGTCACCGTGTGCATCGCACCGTGCTGTAAATGTGGCAGACGCAGCCTGCG
GCCAGGCTTTTTATTTAATGTAAATAGTTTTTGTTTCCAATGAGGCAGTTTCTGGTACTCCTATGCAATA
TTACTCAGCTTTTTTTATTGTAAAAAGAAAAATCAACTCACTGTTCAGTGCTGAGAGGGGATGTAGGCCC
ATGGGCACCTGGCCTCCAGGAGTCGCTGTGTTGGGAGAGCCGGCCACGCCCTTGGCTTTAGAGCTGTGTT
GAAATCCATTTTGGTGGTTGGTTTTTAACCCAAACTCAGTGCATTTTTTAAAATAGTTAAGAATCCAAGT
CGAGAACACTTGAACACACAGAAGGGAGACCCCGCCTAGCATAGATTTGCAGTTACGGCCTGGATGCCAG
TCGCCAGCCCAGCTGTTCCCCTCGGGAACATGAGGTGGTGGTGGCGCAGCAGACTGCGATCAATTCTGCA
TGGTCACAGTAGAGATCCCCGCAACTCGCTTGTCCTTGGGTCACCCTGCATTCCATAGCCATGTGCTTGT
CCCTGTGCTCCCACGGTTCCCAGGGGCCAGGCTGGGAGCCCACAGCCACCCCACTATGCCGCAGGCCGCC
CTACCCACCTTCAGGCAGCCTATGGGACGCAGGGCCCCATCTGTCCCTCGGTCGCCGTGTGGCCAGAGTG
GGTCCGTCGTCCCCAACACTCGTGCTCGCTCAGACACTTTGGCAGGATGTCTGGGGCCTCACCAGCAGGA
GCGCGTGCAAGCCGGGCAGGCGGTCCACCTAGACCCACAGCCCCTCGGGAGCACCCCACCTCTGTGTGTG
ATGTAGCTTTCTCTCCCTCAGCCTGCAAGGGTCCGATTTGCCATCGAAAAAGACAACCTCTACTTTTTTC
TTTTGTATTTTGATAAACACTGAAGCTGGAGCTGTTAAATTTATCTTGGGGAAACCTCAGAACTGGTCTA
TTTGGTGTCGTGGAACCTCTTACTGCTTTCAATACACGATTAGTAATCAACTGTTTTGTATACTTGTTTT
CAGTTTTCATTTCGACAAACAAGCACTGTAATTATAGCTATTAGAATAAAATCTCTTAACTATTT

Human Arf1 mRNA sequence - var14 (public gi: 178982) (SEQ ID NO: 338)
GGGGAAAACCAACGCCTGGCTCGGAGCAGCAGCCTCTGAGGTGTCCCTGGCCAGTGTCCTTCCACCTGTC
CACAAGCATGGGGAACATCTTCGCCAACCTCTTCAAGGGCCTTTTTGGCAAAAAAGAAATGCGCATCCTC
ATGGTGGGCCTGGATGCTGCAGGGAAGACCACGATCCTCTACAAGCTTAAGCTGGGTGAGATCGTGACCA
CCATTCCCACCATAGGCTTCAACGTGGAAACCGTGGAGTACAAGAACATCAGCTTCACTGTGTGGGACGT
GGGTGGCCAGGACAAGATCCGGCCCCTGTGGCGCCACTACTTCCAGAACACACAAGGCCTGATCTTCGTG
GTGGACAGCAATGACAGAGAGCGTGTGAACGAGGCCCGTGAGGAGCTCATGAGGATGCTGGCCGAGGACG
AGCTCCGGGATGCTGTCCTCCTGGTGTTCGCCAACAAGCAGGACCTCCCCAACGCCATGAATGCGGCCGA
GATCACAGACAAGCTGGGGCTGCACTCACTACGCCACAGGAACTGGTACATTCAGGCCACCTGCGCCACC
AGCGGCGACGGGCTCTATGAAGGACTGGACTGGCTGTCCAATCAGCTCCGGAACCAGAAGTGAACGCGAC
CCCCCTCCCTCTCACTCCTCTTGCCCTCTGCTTTACTCTCATGTGGCAAACGTGCGGCTCGTGGTGTGAG
TGCCAGAAGCTGCCTCCGTGGTTTGGTCACCGTGTGCATCGCACCGTGCTGTAAATGTGGCAGACGCAGC
CTGCGGCCAGGCTTTTTATTTAATGTAAATAGTTTTTGTTTCCAATGAGGCAGTTTCTGGTACTCCTATG
CAATATTACTCAGCTTTTTTTATTGTAAAAAGAAAAATCAACTCACTGTTCAGTGCTGAGAGGGGATGTA

Figure 36 part - 6

GGCCCATGGGCACCTGGCCTCCAGGAGTCGCTGTGTTGGGAGAGCCGGCCACGCCCTTGGCTTAGAGCTG
TGTTGAAATCCATTTTGGTGGTTGGTTTTAACCCAAACTCAGTGCATTTTTTAAAATAGTTAAGAATCCA
AGTCGAGAACACTTGAACACACAGAAGGGAGACCCCGCCTAGCATAGATTTGCAGTTACGGCCTGGATGC
CAGTCGCCAGCCCAGCTGTTCCCCTCGGGAACATGAGGTGGTGGTGGCGCAGCAGACTGCGATCAATTCT
GCATGGTCACAGTAGAGATCCCCGCAACTCGCTTGTCCTTGGGTCACCCTGCATTCCATAGCCATGTGCT
TGTCCCTGTGCTCCCACGGTTCCCAGGGGCCAGGCTGGGAGCCCACAGCCACCCCACTATGCCGCAGGCC
GCCCTACCCACCTTCAGGCAGCCTATGGGACGCAGGCCCCATCTGTCCCTCGGTCCGCGTGTGGCCAGAG
TGGTCCGTCGTCCCCAACACTCGTGCTCGCTCAGACACTTTGGCAGGATGTCTGGGGCCTCACCAGCAGG
AGCGCGTGCAAGCCGGGCAGGCGGTCCACCTAGACCCACAGCCCCTCGGGAGCACCCCACCTCTGTGTGT
GATGTAGCTTTCTCTCCCTCAGCCTGCAAGGGTCCGATTTGCCATCGAAAAAGACAACCTCTACTTTTTT
CTTTTGTATTTTGATAAACACTGAAGCTGGAGCTGTTAAATTTATCTTGGGGAAACCTCAGAACTGGTCT
ATTTGGTGTCGTAGGAACCTCTTACTGCTTTCAATACACGATTAGTAATCAACTGTTTTGTATACTTGTT
TTCAGTTTTCATTTCGACAAACAAGCACTGTAATTATAGCTATTAGAATAAAATCTCTTAACTATT

Human Arf1 mRNA sequence - var15 (public gi: 3005720) (SEQ ID NO: 339)

AAACCAACGCCTGGCTCGGAGCAGCAGCCTCTGAGGTGTCCCTGGCCAGTGTCCTTCCACCTGTCCACAA
GCATGGGGAACATCTTCGCCAACCTCTTCAAGGGCCTTTTTGGCAAAAAAGAAATGCGCATCCTCATGGT
GGGCCTGGATGCTGCAGGGAAGACCACGATCCTCTACAAGCTTAAGCTGGGTGAGATCGTGACCACCATT
CCCACCATAGGCTTCAACGTGGAAACCGTGGAGTACAAGAACATCAGCTTCACTGTGTGGGACGTGGGTG
GCCAGGACAAGATCCGGCCCCTGTGGCGCCACTACTTCCAGAACACACAAGGCCTGATCTTCGTGGTGGA
CAGCAATGACAGAGAGCGTGTGAACGAGGCCCGTGAGGAGCTCATGAGGATGCTGGCCGAGGACGAGCTC
CGGGATGCTGTCCTCCTGGTGTTCGCCAACAAGCAGGACCTCCCCAACGCCATGAATGCGGCCGAGATCA
CAGACAAGCTGGGGCTGCACTCACTACGCCACAGGAACTGGTACATTCAGGCCACCTGCGCCACCAGCGG
CGACGGGCTCTATGAAGGACTGGACTGGCTGTCCAATCAGCTCCGGAACCAGAAGTGAACGCGACCCCCC
TCCCTCTCACTCCTCTTGCCCTCTGCTTTACTCTCATGTGGCAAACGTGCGGCTCGTGGTGTGAGTGCCA
GAAGCTGCCTCCGTGGTTTGGTCACCGTGTGCATCGCACCGTGCTGTAAATGTGGCAGACGCACCTGCGG
CCAGGCTTTTTATTTAATGTAAATAGTTTTTGTTTCCAATGAGGCAGTTTCTGGTACTCCTATGCAATAT
TACTCAGCTTTTTTTATTGTAAAAAGAAAAATCAACTCACTGTTCAGTGCTGAGAGGGGATGTAGGCCCA
TGGGCACCTGGCCTCCAGGAGTCGCTGTGTTGGGAGAGCCGGCCACGCCCTTGGCTTTAGAGCTGTGTTG
AAATCCATTTTGGTGGTTGGTTTTTAACCCAAACTCAGTGCATTTTTTAAAATAGTTAAGAATCCAAGTC
GAGAACACTTGAACACACAGAAGGGAGACCCCGCCTAGCATAGATTTGCAGTTACGGCCTGGATGCCAGT
CGCCAGCCCAGCTGTTCCCCTCGGGAACATGAGGTGGTGGTGGCGCAGCAGACTGCGATCAATTCTGCAT
GGTCACAGTAGAGATCCCCGCAACTCGCTTGTCCTTGGTCACCCTGCATTCCATAGCCATGTGCTTGTCC
CTGTGCTCCCACGGTTCCCAGGGGCCAGGCTGGGAGCCCACAGCCACCCCACTATGCCGCAGGCCGCCCT
ACCCACCTTCAGGCAGCCTATGGGACGCAGGGCCCCATCTGTCCCTCGGTCGCCGTGTGGCCAGAGTGGG
TCCGTCGTCCCCAACACTCGTGCTCGCTCAGACACTTTGGCAGGATGTCTGGGGCCTCACCAGCAGGAGC
GCGTGCAAGCCGGGCAGGCGGTCCACCTAGACCCACAGCCCCTCGGGAGCACCCCACCTCTGTGTGTGAT
GTAGCTTTCTCTCCCTCAGCCTGCAAGGGTCCGATTTGCCATCGAAAAAGACAACCTCTACTTTTTTCTT
TTGTATTTTGATAAACACTGAAGCTGGAGCTGTTAAATTTATCTTGGGGAAACCTCAGAACTGGTCTATT
TGGTGTCGTGGAACCTCTTACTGCTTTCAATACACGATTAGTAATCAAAAAAAAAAAAAAAAAAAAAAAA
AAA

Human Arf1 protein sequence - var1 (public gi: 3360491) (SEQ ID NO: 223)

MGNIFANLFKGLFGKKEMRILMVGLDAAGKTTILYKLKLGEIVTTIPTIGFNVETVEYKNISFTVWDVGG
QDKIRPLWRHYFQNTQGLIFVVDSNDRERVNEAREELMRMLAEDELRDAVLLVFANKQDLPNAMNAAEIT
DKLGLHSLRHRNWYIQATCATSGDGLYEGLDWLSNQLRNQK

Figure 36 part - 7

Unigene Name: ARF5 Unigene ID: Hs.430657

Human ARF5 mRNA sequence - var1 (public gi: 178986) (SEQ ID NO: 340)

CCAGTTCCAGCCCGCACCCCGCGTCGGTGCCCGCGCCCCTCCCCGGGCCCCGCCATGGGCCTCACCGTGT
CCGCGCTCTTTTCGCGGATCTTCGGGAAGAAGCAGATGCGGATTCTCATGGTTGGCTTGGATGCGGCTGG
CAAGACCACAATCCTGTACAAACTGAAGTTGGGGGAGATTGTCACCACCATCCCAACCATAGGCTTCAAT
GTAGAAACAGTGGAATATAAGAACATCTGTTTCACAGTCTGGGACGTGGGAGGCCAGGACAAGATTCGGC
CTCTGTGGCGGCACTACTTCCAGAACACTCAGGGCCTCATCTTTGTGGTGGACAGTAATGACCGGGAGCG
GGTCCAAGAATCTGCTGATGAACTCCAGAAGATGCTGCAGGAGGACGAGCTGCGGGATGCAGTGCTGCTG
GTATTTGCCAACAAGCAGGACATGCCCAACGCCATGCCCGTGAGCGAGCTGACTGACAAGCTGGGGCTAC
AGCACTTACGCAGCCGCACGTGGTATGTCCAGGCCACCTGTGCCACCCAAGGCACAGGTCTGTACGATGG
TCTGGACTGGCTGTCCCACGAGCTGTCAAAGCGCTAACCAGCCAGGGGCAGGCCCCTGATGCCCGGAAGC
TCCTGCGTGCATCCCCGGGATGACCAGACTCCCGGACTCCTCAGGCAGTGCCCTTTCCTCCCACTTTTCC
TCCCCCATAGCCACAGGCCTCTGCTCCTGCTCCTGCCTGCATGTTCTCTCTGTTGTTGGAGCCTGGAGCC
TTGCTCTCTGGGCACAGAGGGGTCCACTCTCCTGCCTGCTGGGACCTATGGAAGGGGCTTCCTGGCCAAG
GCCCCCTCTTCCAGAGGAGGAGCAGGGATCTGGGTTTCCTTTTTTTTTTCTGTTTTGGGTGTACTCTAGG
GGCCAGGTTGGGAGGGGGAAGGTGAGGGCTTCGGGTGGTGCTATAATGTGGCACTGGATCTTGAGTAATA
AATTTGCTGTGGTTTG

Human ARF5 mRNA sequence - var2 (public gi: 21620017) (SEQ ID NO: 341)

CTCCTCCTGCTGCTGCTGCGCCCCATCCCCCCGCGGCCGGCCAGTTCCAGCCCGCACCCCGCGTCGGTGC
CCGCGCCCCTCCCCGGGCTCCGCCATGGGCCTCACCGTGTCCGCGCTCTTTTCGCGGATCTTCGGGAAGA
AGCAGATGCGGATTCTCATGGTTGGCTTGGATGCGGCTGGCAAGACCACAATCCTGTACAAACTGAAGTT
GGGGGAGATTGTCACCACCATCCCAACCATAGGCTTCAATGTAGAAACAGTGGAATATAAGAACATCTGT
TTCACAGTCTGGGACGTGGGAGGCCAGGACAAGATTCGGCCTCTGTGGCGGCACTACTTCCAGAACACTC
AGGGCCTCATCTTTGTGGTGGACAGTAATGACCGGGAGCGGGTCCAAGAATCTGCTGATGAACTCCAGAA
GATGCTGCAGGAGGACGAGCTGCGGGATGCAGTGCTGCTGGTATTTGCCAACAAGCAGGACATGCCCAAC
GCCATGCCCGTGAGCGAGCTGACTGACAAGCTGGGGCTACAGCACTTACGCAGCCGCACGTGGTATGTCC
AGGCCACCTGTGCCACCCAAGGCACAGGTCTGTACGATGGTCTGGACTGGCTGTCCCACGAGCTGTCAAA
GCGCTAACCAGCCAGGGGCAGGCCCCTGATGCCCGGAAGCTCCTGCGTGCATCCCCGGGATGACCAGACT
CCCGGACTCCTCAGGCAGTGCCCTTTCCTCCCACTTTTCCTCCCCCATAGCCACAGGCCTCTGCTCCTGC
TCCTGCCTGCATGTTCTCTCTGTTGTTGGAGCCTGGAGCCTTGCTCTCTGGGCACAGAGGGGTCCACTCT
CCTGCCTGCTGGGACCTATGGAAGGGGCTTCCTGGCCAAGGCCCCCTCTTCCAGAGGAGGAGCAGGGATC
TGGGTTTCCTTTTTTTTTTCTGTTTTGGGTGTACTCTAGGGGCCAGGTTGGGAGGGGGAAGGTGAGGGCT
TCGGGTGGTGCTATAATGTGGCACTGGATCTTGAGTAATAAATTTGCTGTGGTTTGTAAAAAAAAAAAAA
AAAAAAAAAAAAAAAA

Human ARF5 mRNA sequence - var3 (public gi: 12804364) (SEQ ID NO: 342)

CCCGCGTCGGTGCCCGCGCCCCTCCCCGGGCCCCGCCATGGGCCTCACCGTGTCCGCGCTCTTTTCGCGG
ATCTTCGGGAAGAAGCAGATGCGGATTCTCATGGTTGGCTTGGATGCGGCTGGCAAGACCACAATCCTGT
ACAAACTGAAGTTGGGGGAGATTGTCACCACCATCCCAACCATAGGCTTCAATGTAGAAACAGTGGAATA
TAAGAACATCTGTTTCACAGTCTGGGACGTGGGAGGCCAGGACAAGATTCGGCCTCTGTGGCGGCACTAC
TTCCAGAACACTCAGGGCCTCATCTTTGTGGTGGACAGTAATGACCGGGAGCGGGTCCAAGAATCTGCTG
ATGAACTCCAGAAGATGCTGCAGGAGGACGAGCTGCGGGATGCAGTGCTGCTGGTATTTGCCAACAAGCA
GGACATGCCCAACGCCATGCCCGTGAGCGAGCTGACTGACAAGCTGGGGCTACAGCACTTACGCAGCCGC
ACGTGGTATGTCCAGGCCACCTGTGCCACCCAAGGCACAGGTCTGTACGATGGTCTGGACTGGCTGTCCC
ACGAGCTGTCAAAGCGCTAACCAGCCAGGGGCAGGCCCCTGATGCCCGGAAGCTCCTGCGTGCATCCCCG
GATGACCATACTCCCGGACTCCTCAGGCAGTGCCCTTTCCTCCCACTTTTCCTCCCCCATAGCCACAGGC
CTCTGCTCCTGCTCCTGCCTGCATGTTCTCTCTGTTGTTGGAGCCTGGAGCCTTGCTCTCTGGGCACAGA
GGGGTCCACTCTCCTGCCTGCTGGGACCTATGGAAGGGGCTTCCTGGCCAAGGCCCCCTCTTCCAGAGGA
GGAGCAGGGATCTGGGTTTCCTTTTTTTTTTCTGTTTTGGGTGTACTCTAGGGGCCAGGTTGGGAGGGGG
AAGGTGAGGGCTTCGGGTGGTGCTATAATGTGGCACTGGATCTTGAGTAATAAATTTGCTGTGGTTTGAA
AAAAAAAAAAAAAAAAAA

Human ARF5 mRNA sequence - var4 (public gi: 30583012) (SEQ ID NO: 343)

ATGGGCCTCACCGTGTCCGCGCTCTTTTCGCGGATCTTCGGGAAGAAGCAGATGCGGATTCTCATGGTTG
GCTTGGATGCGGCTGGCAAGACCACAATCCTGTACAAACTGAAGTTGGGGGAGATTGTCACCACCATCCC
AACCATAGGCTTCAATGTAGAAACAGTGGAATATAAGAACATCTGTTTCACAGTCTGGGACGTGGGAGGC
CAGGACAAGATTCGGCCTCTGTGGCGGCACTACTTCCAGAACACTCAGGGCCTCATCTTTGTGGTGGACA
GTAATGACCGGGAGCGGGTCCAAGAATCTGCTGATGAACTCCAGAAGATGCTGCAGGAGGACGAGCTGCG
GGATGCAGTGCTGCTGGTATTTGCCAACAAGCAGGACATGCCCAACGCCATGCCCGTGAGCGAGCTGACT

Figure 36 part - 8

GACAAGCTGGGGCTACAGCACTTACGCAGCCGCACGTGGTATGTCCAGGCCACCTGTGCCACCCAAGGCA
CAGGTCTGTACGATGGTCTGGACTGGCTGTCCCACGAGCTGTCAAAGCGCTAG

Human ARF5 mRNA sequence - var5 (public gi: 6995999) (SEQ ID NO: 344)
CCGCGTCGGTGCCCGCGCCCCTCCCCGGGCCCCGCCATGGGCCTCACCGTGTCCGCGCTCTTTTCGCGGA
TCTTCGGGAAGAAGCAGATGCGGATTCTCATGGTTGGCTTGGATGCGGCTGGCAAGACCACAATCCTGTA
CAAACTGAAGTTGGGGGAGATTGTCACCACCATCCCAACCATAGGCTTCAATGTAGAAACAGTGGAATAT
AAGAACATCTGTTTCACAGTCTGGGACGTGGGAGGCCAGGACAAGATTCGGCCTCTGTGGCGGCACTACT
TCCAGAACACTCAGGGCCTCATCTTTGTGGTGGACAGTAATGACCGGGAGCGGGTCCAAGAATCTGCTGA
TGAACTCCAGAAGATGCTGCAGGAGGACGAGCTGCGGGATGCAGTGCTGCTGGTATTTGCCAACAAGCAG
GACATGCCCAACGCCATGCCCGTGAGCGAGCTGACTGACAAGCTGGGGCTACAGCACTTACGCAGCCGCA
CGTGGTATGTCCAGGCCACCTGTGCCACCCAAGGCACAGGTCTGTACGATGGTCTGGACTGGCTGTCCCA
CGAGCTGTCAAAGCGCTAACCAGCCAGGGGCAGGCCCCTGATGCCCGGAAGCTCCTGCGTGCATCCCCGG
GATGACCAGACTCCCGGACTCCTCAGGCAGTGCCCTTTCCTCCCACTTTTCCTCCCCCATAGCCACAGGC
CTCTGCTCCTGCTCCTGCCTGCATGTTCTCTCTGTTGTTGGAGCCTGGAGCCTTGCTCTCTGGGCACAGA
GGGGTCCACTCTCCTGCCTGCTGGGACCTATGGAAGGGGCTTCCTGGCCAAGGCCCCCTCTTCCAGAGGA
GGAGCAGGGATCTGGGTTTCCTTTTTTTTTTCTGTTTTGGGTGTACTCTAGGGGCCAGGTTGGGAGGGGG
AAGGTGAGGGCTTCGGGTGGTGCTATAATGTGGCACTGGATCTTGAGTAATAAATTTGCTGTGGTTTG

Human ARF5 protein sequence - var1 (public gi: 30583013) (SEQ ID NO: 224)
MGLTVSALFSRIFGKKQMRILMVGLDAAGKTTILYKLKLGEIVTTIPTIGFNVETVEYKNICFTVWDVGG
QDKIRPLWRHYFQNTQGLIFVVDSNDRERVQESADELQKMLQEDELRDAVLLVFANKQDMPNAMPVSELT
DKLGLQHLRSRTWYVQATCATQGTGLYDGLDWLSHELSKR

Unigene Name: ATP6V0C Unigene ID: Hs.389107

Human ATP6V0C mRNA sequence - var1 (public gi: 33874373) (SEQ ID NO: 345)
GGTATTTAGAGCGCAGCGGCTGACGGGCCGGATCGCCTTCGCCGCCGCCCGCCCGCAAACCTTCGTGCCC
GGCCCGTCCTCGCCCCCGCCTCCGCCACCGCCTCGGCCCGCAGAGCTTGCCCCCTCCCCACCCGCAGACA
TGTCCGAGTCCAAGAGCGGCCCCGAGTATGCTTCGTTTTTCGCCGTCATGGGCGCCTCGGCCGCCATGGT
CTTCAGCGCCCTGGGCGCTGCCTATGGCACAGCCAAGAGCGGTACCGGCATTGCGGCCATGTCTGTCATG
CGGCCGGAGCAGATCATGAAGTCCATCATCCCAGTGGTCATGGCTGGCATCATCGCCATCTACGGCCTGG
TGGTGGCAGTCCTCATCGCCAACTCCCTGAATGACGACATCAGCCTCTACAAGAGCTTCCTCCAGCTGGG
CGCCGGCCTGAGCGTGGGCCTGAGCGGCCTGGCAGCCGGCTTTGCCATCGGCATCGTGGGGGACGCTGGC
GTGCGGGGCACCGCCCAGCAGCCCCGACTATTCGTGGGCATGATCCTGATTCTCATCTTCGCCGAGGTGC
TCGGCCTCTACGGTCTCATCGTCGCCCTCATCCTCTCCACAAAGTAGACCCTCTCCGAGCCCACCAGCCA
CAGAATATTATGTAAAGACCACCCCTCCTCATTCCAGAACGAACAGCCTGACACATACGCACGGGGCCGC
CGCCCCCAGTAGTTGGTCTTGTACATGCGCAGTGTCCTAGTGCCCATCGTCTGTTTCCCCGGCCTTGCCC
CCGCCCGCCCCGTGCCGTGGACATCTGGGCCCACTCATCGCCCCTCCAGGCCCCCGGCGCCCCACCCCCT
AGAGTGCTCTGTGTATGCGGATGATTTAGAATTGTCATTTCTCTTTACTGGATGTTTATTTATAAAGATC
TGGCCTGTTCCTGCGTCTGCGGAGCGGCCCTTGTCTCCCAGCTATCTATAACCTTAGCTAGAGTGTCGCC
TTGTGGGTTCCTGTTGCTGAGACTTCCTGGATGGAGCCGCCCTCACCGCCGGGCCCGTGGCCCTGCGCGG
AGCTGTGTCCAATAAAGTTCTTGGATGTGAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

Human ATP6V0C mRNA sequence - var2 (public gi: 33872390) (SEQ ID NO: 346)
GGCTGACGGGCCGGATCGCCTTCGCCGCCGCCCGCCCGCAAACCTTCGTGCCCGGCCCGTCCTCGCCCCC
GCCTCCGCCACCGCCTCGGCCCGCAGAGCTTGCCCCCTCCCCACCCGCAGACATGTCCGAGTCCAAGAGC
GGCCCCGAGTATGCTTCGTTTTTCGCCGTCATGGGCGCCTCGGCCGCCATGGTCTTCAGCGCCCTGGGCG
CTGCCTATGGCACAGCCAAGAGCGGTACCGGCATTGCGGCCATGTCTGTCATGCGGCCGGAGCAGATCAT
GAAGTCCATCATCCCAGTGGTCATGGCTGGCATCATCGCCATCTACGGCCTGGTGGTGGCAGTCCTCATC
GCCAACTCCCTGAATGACGACATCAGCCTCTACAAGAGCTTCCTCCAGCTGGGCGCCGGCCTGAGCGTGG
GCCTGAGCGGCCTGGCAGCCGGCTTTGCCATCGGCATCGTGGGGGACGCTGGCGTGCGGGGCACCGCCCA
GCAGCCCCGACTATTCGTGGGCATGATCCTGATTCTCATCTTCGCCGAGGTGCTCGGCCTCTACGGTCTC
ATCGTCGCCCTCATCCTCTCCACAAAGTAGACCCTCTCCGAGCCCACCAGCCACAGAATATTATGTAAAG
ACCACCCCTCCTCATTCCAGAACGAACAGCCTGACACATACGCACGGGGCCGCCGCCCCCAGTAGTTGGT
CTTGTACATGCGCAGTGTCCTAGTGCCCATCGTCTGTTTCCCCGGCCTTGCCCCCGCCCCGTGCCG
TGGACATCTGGGCCCACTCATCGCCCCTCCAGGCCCCCGGCGCCCCACCCCCTAGAGTGCTCTGTGTATG
CGGATGATTTAGAATTGTCATTTCTCTTTACTGGATGTTTATTTATAAAGATCTGGCCTGTTCCTGCGTC

Figure 36 part - 9

TGCGGAGCGGCCCTTGTCTCCCAGCTATCTATAACCTTAGCTAGAGTGTCGCCTTGTGGGTTCCTGTTGC
TGAGACTTCCTGGATGGAGCCGCCCTCACCGCCGGGCCCGTGGCCCTGCGCGGAGCTGTGTCCAATAAAG
TTCTTGGATGTGAAAAAAAAAAAAAAAAAATAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAA

Human ATP6V0C mRNA sequence - var3 (public gi: 33873673) (SEQ ID NO: 347)
CGCCTTCGCCGCCGCCCGCCCGCAAACCTTCGTGCCCGGCCCGTCCTCGCCCCCGCCTCCGCCACCGCCT
CGGCCCGCAGAGCTTGCCCCCTCCCCACCCGCAGACATGTCCGAGTCCAAGAGCGGCCCCGAGTATGCTT
CGTTTTTCGCCGTCATGGGCGCCTCGGCCGCCATGGTCTTCAGCGCCCTGGGCGCTGCCTATGGCACAGC
CAAGAGCGGTACCGGCATTGCGGCCATGTCTGTCATGCGGCCGGAGCAGATCATGAAGTCCATTATCCCA
GTGGTCATGGCTGGCATCATCGCCATCTACGGCCTGGTGGTGGCAGTCCTCATCGCCAACTCCCTGAATG
ACGACATCAGCCTCTACAAGAGCTTCCTCCAGCTGGGCGCCGGCCTGAGCGTGGGCCTGAGCGGCCTGGC
AGCCGGCTTTGCCATCGGCATCGTGGGGGACGCTGGCGTGCGGGGCACCGCCCAGCAGCCCCGACTATTC
GTGGGCATGATCCTGATTCTCATCTTCGCCGAGGTGCTCGGCCTCTACGGTCTCATCGTCGCCCTCATCC
TCTCCACAAAGTAGACCCTCTCCGAGCCCACCAGCCACAGAATATTATGTAAAGACCACCCCTCCTCATT
CCAGAACGAACAGCCTGACACATACGCACGGGGCCGCCGCCCCCAGTAGTTGGTCTTGTACATGCGCAGT
GTCCTAGTGCCCATCGTCTGTTTCCCCGGCCTTGCCCCCGCCCGCCCCGTGCCGTGGACATCTGGGCCCA
CTCATCGCCCCTCCAGGCCCCCGGCGCCCCACCCCCTAGAGTGCTCTGTGTATGCGGATGATTTAGAATT
GTCATTTCTCTTTACTGGATGTTTATTTATAAAGATCTGGCCTGTTCCTGCGTCTGCGGAGCGGCCCTTG
TCTCCCAGCTATCTATAACCTTAGCTAGAGTGTCGCCTTGTGGGTTCCTGTTGCTGAGACTTCCTGGATG
GAGCCGCCCTCACCGCCGGGCCCGTGGCCCTGCGCGGAGCTGTGTCCAATAAAGTTCTTGGATGTGAAAA
AAAAAAAAAAAAAAAAAAA

Human ATP6V0C mRNA sequence - var4 (public gi: 33990932) (SEQ ID NO: 348)
GACGGGCCGGATCGCCTTCGCCGCCGCCCGCCCGCAAACCTTCGTGCCCGGCCCGTCCTCGCCCCCGCCT
CCGCCACCGCCTCGGCCCGCAGAGCTTGCCCCCTCCCCACCCGCAGACATGTCCGAGTCCAAGAGCGGCC
CCGAGTATGCTTCGTTTTTCGCCGTCATGGGCGCCTCGGCCGCCATGGTCTTCAGCGCCCTGGGCGCTGC
CTATGGCACAGCCAAGAGCGGTACCGGCATTGCGGCCATGTCTGTCATGCGGCCGGAGCAGATCATGAAG
TCCATCATCCCAGTGGTCATGGCTGGCATCATCGCCATCTACGGCCTGGTGGTGGCAGTCCTCATCGCCA
ACTCCCTGAATGACGACATCAGCCTCTACAAGAGCTTCCTCCAGCTGGGCGCCGGCCTGAGCGTGGGCCT
GAGCGGCCTGGCAGCCGGCTTTGCCATCGGCATCGTGGGGGACGCTGGCGTGCGGGGCACCGCCCAGCAG
CCCCGACTATTCGTGGGCATGATCCTGATTCTCATCTTCGCCGAGGTGCTCGGCCTCTACGGTCTCATCG
TCGCCCTCATCCTCTCCACAAAGTAGACCCTCTCCGAGCCCACCAGCCACAGAATATTATGTAAAGACCA
CCCCTCCTCATTCCAGAACGAACAGCCTGACACATACGCACGGGGCCGCCGCCCCCAGTAGTTGGTCTTG
TACATGCGCAGTGTCCTAGTGCCCATCGTCTGTTTCCCCGGCCTTGCCCCCGCCCGCCCCGTGCCGTGGA
CATCTGGGCCCACTCATCGCCCCTCCAGGCCCCCGGCGCCCCACCCCCTAGAGTGCTCTGTGTATGCGGA
TGATTTAGAATTGTCATTTCTCTTTACTGGATGTTTATTTATAAAGATCTGGCCTGTTCCTGCGTCTGCG
GAGCGGCCCTTGTCTCCCAGCTATCTATAACCTTAGCTAGAGTGTCGCCTTGTGGGTTCCTGTTGCTGAG
ACTTCCTGGATGGAGCCGCCCTCACCGCCGGGCCCGTGGCCCTGCGCGGAGCTGTGTCCAATAAAGTTCT
TGGATGTGAAAAAAAAAAAAAAAAAAA

Human ATP6V0C mRNA sequence - var5 (public gi: 19913436) (SEQ ID NO: 349)
GTTCTGCGGTGCTGGTATTTAGAGCGCAGCGGCTGACGGGCCGGATCGCCTTCGCCGCCGCCCGCCCGCA
AACCTTCGTGCCCGGCCCGTCCTCGCCCCCGCCTCCGCCACCGCCTCGGCCCGCAGAGCTTGCCCCCTCC
CCACCCGCAGACATGTCCGAGTCCAAGAGCGGCCCCGAGTATGCTTCGTTTTTCGCCGTCATGGGCGCCT
CGGCCGCCATGGTCTTCAGCGCCCTGGGCGCTGCCTATGGCACAGCCAAGAGCGGTACCGGCATTGCGGC
CATGTCTGTCATGCGGCCGGAGCAGATCATGAAGTCCATCATCCCAGTGGTCATGGCTGGCATCATCGCC
ATCTACGGCCTGGTGGTGGCAGTCCTCATCGCCAACTCCCTGAATGACGACATCAGCCTCTACAAGAGCT
TCCTCCAGCTGGGCGCCGGCCTGAGCGTGGGCCTGAGCGGCCTGGCAGCCGGCTTTGCCATCGGCATCGT
GGGGGACGCTGGCGTGCGGGGCACCGCCCAGCAGCCCCGACTATTCGTGGGCATGATCCTGATTCTCATC
TTCGCCGAGGTGCTCGGCCTCTACGGTCTCATCGTCGCCCTCATCCTCTCCACAAAGTAGACCCTCTCCG
AGCCCACCAGCCACAGAATATTATGTAAAGACCACCCCTCCTCATTCCAGAACGAACAGCCTGACACATA
CGCACGGGGCCGCCGCCCCCAGTAGTTGGTCTTGTACATGCGCAGTGTCCTAGTGCCCATCGTCTGTTTC
CCCGGCCTTGCCCCCGCCCGCCCCGTGCCGTGGACATCTGGGCCCACTCATCGCCCCTCCAGGCCCCCGG
CGCCCCACCCCCTAGAGTGCTCTGTGTATGCGGATGATTTAGAATTGTCATTTCTCTTTACTGGATGTTT
ATTTATAAAGATCTGGCCTGTTCCTGCGTCTGCGGAGCGGCCCTTGTCTCCCAGCTATCTATAACCTTAG
CTAGAGTGTCGCCTTGTGGGTTCCTGTTGCTGAGACTTCCTGGATGGAGCCGCCCTCACCGCCGGGCCCG
TGGCCCTGCGCGGAGCTGTGTCCAATAAAGTTCTTGGATGTGAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAA

Human ATP6V0C mRNA sequence - var6 (public gi: 34534447) (SEQ ID NO: 350)

Figure 36 part - 10

TTTATGCTTGTGTTTCTGCAACTGCTTTCTGGCCCCCCACTCTTTCTGTGGCTGCTGAGCCTAGTGCCGC
TCACAGGTCTGCCTTCTGCAGTCTGGTCAGGCTTGGCCTCCGGACTGGAGTCCAGGGTGCTCATGGTATT
CCGCTCCTGGTGGCCATCCCTTTCTTCCCTGTGCTCCTCTTGGTGCCTCCTCCCCCTGCCAGCCACATGA
TTCTTCCTGCTGCCCTCTGTAGAAAAGGGCCTGGCTCACTTCCTGCCTCTGGTGGACTACTGGCCTCACA
GGGTCCACTACTTGGGTTGCTGAGTTCCCTGTATTCAGTCTCCTGCCAACGTGTCTGCCATGCTCTGGTC
TCTTGTGCATACATGATGCAGTTGGATGTGGTCCTGGGCCTGCAGTGGGAGCCCCCTAAAATGCACTGTA
ATTGCTCTATATGCTTGCCAGGGAAAAAATGCACTGTAACCAGGAGTTCAGGACAGGCGCTGGGACAGGC
CCTGGGCCCCAGTCTGCAGGTGCACTGGGTGTTGGCATGGCATGTCTGGGCACCTCCAGGGTGGCGTGGA
GGAGGCCGTGTGGCTCCCTGGCCCAGGTCTCAGCCTCCTTCCTCCCTCTATAGTCACTCCCTGGATACCC
AGCACCGTCGTCTTGGGTGCCTCTGCAGGTGCTATCCAGAGCCCTTGTCTTATTGCCTTGTTTTTCTGTG
ACTCCTCTCTCCCGCCAACTTGGGATACTTGTCTGTGAAGCCCTTCCCCAGCACCCCCTTCTCCGCTCTC
CTGGAGCATGTCTCTGTGCCTGGAGGTCACCGCGCCTGTGTCCTCACCCCTGCTGAGTGCTGGGACACAG
GGTAGGCAAGTTTTGTGGCCCAAATATATCAATAAAATATGAAGAGGAATGGTAGGGGTAGTCCTGGTCC
CTTCCACCTCTGACATATGTAGTCTTCTGCAGGTCAGGCTGTTTGTGTGTGTGTGTGTGTGTGTGTGT
GTGTGTGTGTGTCTGTCAGAGATTCACTCTTGTTGTTTGTTTGAGACGGAGTCTCTCTGTGTCGCCCAGG
CTGGAGTGCAGTGGCGTGATCTTGACTCACTGCAACCTCCACTCCTGGGTTCAGGCGATTCTCCTGCCTC
AGCCTCCCTAGTAACTGGGATGACAGGCATGCGCCACCACTCCTGGCTAATTTTTGTATTTTTAGTAGAG
ACGAGGTTTCACCATGTTACCCAGGCTAATCTCGAACTTCGGATCACCTGAGGTCAGGAGTTGGAGACCA
GCCTGGCCAACATGGTGAAACCCCATCTCTACTAAAAATACAAAGAAAGTTAGCCAGGTCTGGTGGTGCG
TGCCTGTAATCCCACTTACTCGGGAGGCTGAGGCAGGAGAATCACTTGAACCCAGGAGGCAGAGGTTACA
GTGAGCCGAGATCGCGCCACTGCACTCCACCCTGGGCAACAAGAGCGAAAACTGTCTCAAAAAAAAAAAA
AAAAAATTTTTCATTTGAGGTATTCTTCCAGTAGAAGGTTAGTAAGTTTTTAATGAAACCATTAAAAATT
ACACTTCCCAGAAAATAGATGACATCAGTGCCCCTTGCTACTTTCTCAGTCCTCACTATTGCTTTGAGGG
CCCAGGTACTGAAACTGGTTGTCTTGAGTTTTGTGTCAGCTTTTTCTCCAGTCCATTATCCCCCTCCCTT
GCTTCTGAAGCAGTCTAGGTTAAACTAGCCAGGCAGGTAGTTGTGGACTGGTGATTTTCAAAAGCCCCAC
TTTAGAGATCAGGCCACAGCTTTTTATATCGCACAGGACACATCAGCCTGAGCTGCTGCCTCATGCCTGT
TTCCCCAGGAACCTCACTCCTTTGGTAGAACCTTGGGATTTTAGAAATTGTGGCTTTTCCATAACTCATT
TACTCCAACAGTTGAAGTTACACACATTGCTCCCAAATTTGGAAATAGACCACAGTACCTTACCTTTCAT
TCCCCATCTGGCCTTTACCTTCTTTGCTTCAGTGGTTGAAAACAGTTGCCATATTCAAAGTATAGTAGAT
TTCAACCTCACACAAATGACAAGTCCCATTTTACAATCCTAGGAAGGCCCACCAATTTCATTTCACGCGC
CAGGGCGGCTGCAGTTGGAGGCCGAGGGCAGCCCTCTGCTCACTGAATGTCTTGCATGTGCTGACTGCTG
CCCGCAGTGCTGAACATGCCCCACCGCCCAGGCCCAGCACTGCTTGTTGGGTCAG

Human ATP6V0C mRNA sequence - var7 (public gi: 30583148) (SEQ ID NO: 351)

ATGTCCGAGTCCAAGAGCGGCCCCGAGTATGCTTCGTTTTTCGCCGTCATGGGCGCCTCGGCCGCCATGG
TCTTCAGCGCCCTGGGCGCTGCCTATGGCACAGCCAAGAGCGGTACCGGCATTGCGGCCATGTCTGTCAT
GCGGCCGGAGCAGATCATGAAGTCCATCATCCCAGTGGTCATGGCTGGCATCATCGCCATCTACGGCCTG
GTGGTGGCAGTCCTCATCGCCAACTCCCTGAATGACGACATCAGCCTCTACAAGAGCTTCCTCCAGCTGG
GCGCCGGCCTGAGCGTGGGCCTGAGCGGCCTGGCAGCCGGCTTTGCCATCGGCATCGTGGGGGACGCTGG
CGTGCGGGGCACCGCCCAGCAGCCCCGACTATTCGTGGGCATGATCCTGATTCTCATCTTCGCCGAGGTG
CTCGGCCTCTACGGTCTCATCGTCGCCCTCATCCTCTCCACAAAGTAG

Human ATP6V0C protein sequence - var1 (public gi: 30583149) (SEQ ID NO: 225)

MSESKSGPEYASFFAVMGASAAMVFSALGAAYGTAKSGTGIAAMSVMRPEQIMKSIIPVVMAGIIAIYGL
VVAVLIANSLNDDISLYKSFLQLGAGLSVGLSGLAAGFAIGIVGDAGVRGTAQQPRLFVGMILILIFAEV
LGLYGLIVALILSTK

Human ATP6V0C protein sequence - var2 (public gi: 34534448) (SEQ ID NO: 226)

MILPAALCRKGPGSLPASGGLLASQGPLLGLLSSLYSVSCQRVCHALVSCAYMMQLDVVLGLQWEPPKMH
CNCSICLPGKKCTVTRSSGQALGQALGPSLQVHWVLAWHVWAPPGWRGGGRVAPWPRSQPPSSLYSHSLD
TQHRRLGCLCRCYPEPLSYCLVFL

Human ATP6V0C pray sequence - var1 (SEQ ID NO: 352)

CCGCCATGGAGTACCCATACGACGTACCAGATTACGCTCATATGGCCATGGAGGCCAGTGAATTCCACCC
AAGCAGTGGTATCAACGCAGAGTGGCCATTTGGGGGGTCTGCGGTGCTGGTATTTAGAGCGCAGCGGCTG
ACGGGCCGGATCGCCTTCGCCGCCGCCCGCCCGCAAACCTTCGTGCCCGGCCCGTCCTCGCCCCCGCCTC
CGCCACCGCCTCGGCCCGCAGAGCTTGCCCCCTCCCCCCCATGTCGGCCGCCTCGGCCTCTAGAGGGTGG
GCATCGATACGGGATCCATCGAGCTCGAGCTGCAGATGAATCGTAGATACTGAAAAACCCCGCAAGTTCA
CTTCAACTGTGCATTCGTGCA

Unigene Name: CBLB Unigene ID: Hs.3144 Clone ID: 3GD_114

Figure 36 part - 11

Human CBL-B mRNA sequence - var1 (public gi: 4757919) (SEQ ID NO: 353)

CTGGGTCCTGTGTGTGCCACAGGGGTGGGGTGTCCAGCGAGCGGTCTCCTCCTCCTGCTAGTGCTGCTGC
GGCGTCCCGCGGCCTCCCCGAGTCGGGCGGGAGGGGAGAGCGGGTGTGGATTTGTCTTGACGGTAATTGT
TGCGTTTCCACGTCTCGGAGGCCTGCGCGCTGGGTTGCTCCTTCTTCGGGAGCGAGCTGTTCTCAGCGAT
CCCACTCCCAGCCGGGGCTCCCCACACACACTGGGCTGCGTGCGTGTGGAGTGGGACCCGCGCACACGCG
TGTCTCTGGACAGCTACGGCGCCGAAAGAACTAAAATTCCAGATGGCAAACTCAATGAATGGCAGAAACC
CTGGTGGTCGAGGAGGAAATCCCCGAAAAGGTCGAATTTTGGGTATTATTGATGCTATTCAGGATGCAGT
TGGACCCCCTAAGCAAGCTGCCGCAGATCGCAGGACCGTGGAGAAGACTTGGAAGCTCATGGACAAAGTG
GTAAGACTGTGCCAAAATCCCAAACTTCAGTTGAAAAATAGCCCACCATATATACTTGATATTTTGCCTG
ATACATATCAGCATTTACGACTTATATTGAGTAAATATGATGACAACCAGAAACTTGCCCAACTCAGTGA
GAATGAGTACTTTAAAATCTACATTGATAGCCTTATGAAAAAGTCAAAACGGGCAATAAGACTCTTTAAA
GAAGGCAAGGAGAGAATGTATGAAGAACAGTCACAGGACAGACGAAATCTCACAAAACTGTCCCTTATCT
TCAGTCACATGCTGGCAGAAATCAAAGCAATCTTTCCCAATGGTCAATTCCAGGGAGATAACTTTCGTAT
CACAAAAGCAGATGCTGCTGAATTCTGGAGAAAGTTTTTTGGAGACAAAACTATCGTACCATGGAAAGTA
TTCAGACAGTGCCTTCATGAGGTCCACCAGATTAGCTCTAGCCTGGAAGCAATGGCTCTAAAATCAACAA
TTGATTTAACTTGCAATGATTACATTTCAGTTTTTGAATTTGATATTTTTACCAGGCTGTTTCAGCCTTG
GGGCTCTATTTTGCGGAATTGGAATTTCTTAGCTGTGACACATCCAGGTTACATGGCATTTCTCACATAT
GATGAAGTTAAAGCACGACTACAGAAATATAGCACCAAACCCGGAAGCTATATTTTCCGGTTAAGTTGCA
CTCGATTGGGACAGTGGGCCATTGGCTATGTGACTGGGGATGGGAATATCTTACAGACCATACCTCATAA
CAAGCCCTTATTTCAAGCCCTGATTGATGGCAGCAGGGAAGGATTTTATCTTTATCCTGATGGGAGGAGT
TATAATCCTGATTTAACTGGATTATGTGAACCTACACCTCATGACCATATAAAAGTTACACAGGAACAAT
ATGAATTATATTGTGAAATGGGCTCCACTTTTCAGCTCTGTAAGATTTGTGCAGAGAATGACAAAGATGT
CAAGATTGAGCCTTGTGGGCATTTGATGTGCACCTCTTGCCTTACGGCATGGCAGGAGTCGGATGGTCAG
GGCTGCCCTTTCTGTCGTTGTGAAATAAAAGGAACTGAGCCCATAATCGTGGACCCCTTTGATCCAAGAG
ATGAAGGCTCCAGGTGTTGCAGCATCATTGACCCCTTTGGCATGCCGATGCTAGACTTGGACGACGATGA
TGATCGTGAGGAGTCCTTGATGATGAATCGGTTGGCAAACGTCCGAAAGTGCACTGACAGGCAGAACTCA
CCAGTCACATCACCAGGATCCTCTCCCCTTGCCCAGAGAAGAAAGCCACAGCCTGACCCACTCCAGATCC
CACATCTAAGCCTGCCACCCGTGCCTCCTCGCCTGGATCTAATTCAGAAAGGCATAGTTAGATCTCCCTG
TGGCAGCCCAACAGGTTCACCAAAGTCTTCTCCTTGCATGGTGAGAAAACAAGATAAACCACTCCCAGCA
CCACCTCCTCCCTTAAGAGATCCTCCTCCACCGCCACCTGAAAGACCTCCACCAATCCCACCAGACAATA
GACTGAGTAGACACATCCATCATGTGGAAAGCGTGCCTTCCAGAGACCCGCCAATGCCTCTTGAAGCATG
GTGCCCTCGGGATGTGTTTGGGACTAATCAGCTTGTGGGATGTCGACTCCTAGGGGAGGGCTCTCCAAAA
CCTGGAATCACAGCGAGTTCAAATGTCAATGGAAGGCACAGTAGAGTGGGCTCTGACCCAGTGCTTATGC
GGAAACACAGACGCCATGATTTGCCTTTAGAAGGAGCTAAGGTCTTTTCCAATGGTCACCTTGGAAGTGA
AGAATATGATGTTCCTCCCCGGCTTTCTCCTCCTCCTCCAGTTACCACCCTCCTCCCTAGCATAAAGTGT
ACTGGTCCGTTAGCAAATTCTCTTTCAGAGAAAACAAGAGACCCAGTAGAGGAAGATGATGATGAATACA
AGATTCCTTCATCCCACCCTGTTTCCCTGAATTCACAACCATCTCATTGTCATAATGTAAAACCTCCTGT
TCGGTCCTGTGATAATGGTCACTGTATGCTGAATGGAACACATGGTCCATCTTCAGAGAAGAAATCAAAC
ATCCCTGACTTAAGCATATATTTAAAGGGTACGTATAGAATATAATTTCCTTTGTGATGTACATCTTAAT
GGTCAGAATTTAAAGGCAAAATTTCATGCCATTGTACTGAAAATACATTAAGGTTTTGTGTTATCCTCTA
GGAGATGTTTTTGATTCAGCCTCTGATCCCGTGCCATTACCACCTGCCAGGCCTCCAACTCGGGACAATC
CAAAGCATGGTTCTTCACTCAACAGGACGCCCTCTGATTATGATCTTCTCATCCCTCCATTAGGTTGAAA
CCTTTAAAAAAGTTTTGAACAACCCACCCCTCCTTCTTTTAATTTCAGAATTTTCAGAATTCAGAGTTCA
GTATAACACAGACTCACTGGGTTGTGAATTTGCCTGAAATTTGAATGGGTTCTCCAGGTGCCGGTGACTC
CCAAGTTCACGAGACCATTACTCCATGTAGATGATTAAGGTAGTAGTGTAGTAGTTGGGCATCAGTCAGG
TTTTAAGCAAGTTGTTTTGTCCATACTAAATGTAGTCTAAAAACACATGAGAGCTTTGTGCTCTAGTAGT
TTTGAAGTGATGACTTGAAGTGTTGAGATTTTCTTTAAGTATAATAATTCTTAATAAATATGAACTTGCT
TTTCTTGCAGCATGAGCACCAGTTCCACTTACGCTAATTAAATTATGCAAAATTAAATAGTTGTATGTAG
AGAACTGATAATAAATTCTGTTTTATTCTAATCATTACAACTGTAACACATTCAAAAAAAAAAA

Human CBL-B mRNA sequence - var2 (public gi: 23273908) (SEQ ID NO: 354)

AGCGGAGTGCTGCTGCGGCGTCCCGCGGCCTCCCCGAGTCGGGCGGGAGGGGAGAGCGGGTGTGGATTTG
TCTTGACGGTAATTGTTGCGTTTCCACGTCTCGGAGGCCTGCGCGCTGGGTTGCTCCTTCTTCGGGAGCG
AGCTGTTCTCAGCGATCCCACTCCCAGCCGGGGCTCCCCACACACACTGGGCTGCGTGCGTGTGGAGTGG
GACCCGCGCACACGCGTGTCTCTGGACAGCTACGGCGCCGAAAGAACTAAAATTCCAGATGGCAAACTCA
ATGAATGGCAGAAACCCTGGTGGTCGAGGAGGAAATCCCCGAAAAGGTCGAATTTTGGGTATTATTGATG
CTATTCAGGATGCAGTTGGACCCCCTAAGCAAGCTGCCGCAGATCGCAGGACCGTGGAGAAGACTTGGAA
GCTCATGGACAAAGTGGTAAGACTGTGCCAAAATCCCAAACTTCAGTTGAAAAATAGCCCACCATATATA
CTTGATATTTTGCCTGATACATATCAGCATTTACGACTTATATTGAGTAAATATGATGACAACCAGAAAC
TTGCCCAACTCAGTGAGAATGAGTACTTTAAAATCTACATTGATAGCCTTATGAAAAAGTCAAAACGGGC
AATAAGACTCTTTAAAGAAGGCAAGGAGAGAATGTATGAAGAACAGTCACAGGACAGACGAAATCTCACA

Figure 36 part - 12

AAACTGTCCCTTATCTTCAGTCACATGCTGGCAGAAATCAAAGCAATCTTTCCCAATGGTCAATTCCAGG
GAGATAACTTTCGTATCACAAAAGCAGATGCTGCTGAATTCTGGAGAAAGTTTTTTGGAGACAAAACTAT
CGTACCATGGAAAGTATTCAGACAGTGCCTTCATGAGGTCCACCAGATTAGCTCTGGCCTGGAAGCAATG
GCTCTAAAATCAACAATTGATTTAACTTGCAATGATTACATTTCAGTTTTTGAATTTGATATTTTTACCA
GGCTGTTTCAGCCTTGGGGCTCTATTTTGCGGAATTGGAATTTCTTAGCTGTGACACATCCAGGTTACAT
GGCATTTCTCACATATGATGAAGTTAAAGCACGACTACAGAAATATAGCACCAAACCCGGAAGCTATATT
TTCCGGTTAAGTTGCACTCGATTGGGACAGTGGGCCATTGGCTATGTGACTGGGGATGGGAATATCTTAC
AGACCATACCTCATAACAAGCCCTTATTTCAAGCCCTGATTGATGGCAGCAGGGAAGGATTTTATCTTTA
TCCTGATGGGAGGAGTTATAATCCTGATTTAACTGGATTATGTGAACCTACACCTCATGACCATATAAAA
GTTACACAGGAACAATATGAATTATATTGTGAAATGGGCTCCACTTTTCAGCTCTGTAAGATTTGTGCAG
AGAATGACAAAGATGTCAAGATTGAGCCTTGTGGGCATTTGATGTGCACCTCTTGCCTTACGGCATGGCA
GGAGTCGGATGGTCAGGGCTGCCCTTTCTGTCGTTGTGAAATAAAAGGAACTGAGCCCATAATCGTGGAT
CCCTTTGATCCAAGAGATGAAGGCTCCAGGTGTTGCAGCATCATTGACCCCTTTGGCATGCCGATGCTCG
ACTTGGACGACGATGATGATCGTGAGGAGTCCTTGATGATGAATCGGTTGGCAAACGTCCGAAAGTGCAC
TGACAGGCAGAACTCACCAGTCACATCACCAGGATCCTCTCCCCTTGCCCAGAGAAGAAAGCCACAGCCT
GACCCACTCCAGATCCCACATCTAAGCCTGCCACCCGTGCCTCCTCGCCTGGATCTAATTCAGAAAGGCA
TAGTTAGATCTCCCTGTGGCAGCCCAACGGGTTCACCAAAGTCTTCTCCTTGCATGGTGAGAAAACAAGA
TAAACCACTCCCAGCACCACCTCCTCCCTTAAGAGATCCTCCTCCACCGCCACCTGAAAGACCTCCACCA
ATCCCACCAGACAATAGACTGAGTAGACACATCCATCATGTGGAAAGCGTGCCTTCCAAAGACCCGCCAA
TGCCTCTTGAAGCATGGTGCCCTCGGGATGTGTTTGGGACTAATCAGCTTGTGGGATGTCGACTCCTAGG
GGAGGGCTCTCCAAAACCTGGAATCACAGCGAGTTCAAATGTCAATGGAAGGCACAGTAGAGTGGGCTCT
GACCCAGTGCTTATGCGGAAACACAGACGCCATGATTTGCCTTTAGAAGGAGCTAAGGTCTTTTCCAATG
GTCACCTTGGAAGTGAAGAATATGATGTTCCTCCCCGGCTTTCTCCTCCTCCTCCAGTTACCACCCTCCT
CCCTAGCATAAAGTGTACTGGTCCGTTAGCAAATTCTCTTTCAGAGAAAACAAGAGACCCAGTAGAGGAA
GATGATGATGAATACAAGATTCCTTCATCCCACCCTGTTTCCCTGAATTCACAACCATCTCATTGTCATA
ATGTAAAACCTCCTGTTCGGTCTTGTGATAATGGTCACTGTATGCTGAATGGAACACATGGTCCATCTTC
AGAGAAGAAATCAAACATCCCTGACTTAAGCATATATTTAAAGGGAGATGTTTTTGATTCAGCCTCTGAT
CCCGTGCCATTACCACCTGCCAGGCCTCCAACTCGGGACAATCCAAAGCATGGTTCTTCACTCAACAGGA
CGCCCTCTGATTATGATCTTCTCATCCCTCCATTAGGTGAAGATGCTTTTGATGCCCTCCCTCCATCTCT
CCCACCTCCCCCACCTCCTGCAAGGCATAGTCTCATTGAACATTCAAAACCTCCTGGCTCCAGTAGCCGG
CCATCCTCAGGACAGGATCTTTTTCTTCTTCCTTCAGATCCCTTTGTTGATCTAGCAAGTGGCCAAGTTC
CTTTGCCTCCCGCTAGAAGGTTACCAGGTGAAAATGTCAAAACTAACAGAACATCACAGGACTATGATCA
GCTTCCTTCATGTTCAGATGGTTCACAGGCACCAGCCAGACCCCCTAAACCACGACCGCGCAGGACTGCA
CCAGAAATTCACCACAGAAAACCCCATGGGCCTGAGGCGGCATTGGAAAATGTCGATGCAAAAATTGCAA
AACTCATGGGAGAGGGTTATGCCTTTGAAGAGGTGAAGAGAGCCTTAGAGATAGCCCAGAATAATGTCGA
AGTTGCCCGGAGCATCCTCCGAGAATTTGCCTTCCCTCCTCCAGTATCCCCACGTCTAAATCTATAGCAG
CCAGAACTGTAGACACCAAAATGGAAAGCAATCGATGTATTCCAAGAGTGTGGAAATAAAGAGAACTGAG
ATGGAATTCAAGAGAGAAGTGTCTCCTCCTCGTGTAGCAGCTTGAGAAGAGGCTTGGGAGTGCAGCTTCT
CAAAGGAGACCGATGCTTGCTCAGGATGTCGACAGCTGTGGCTTCCTTGTTTTTGCTAGCCATATTTTTA
AATCAGGGTTGAACTGACAAAAATAATTTAAAGACGTTTACTTCCCTTGAACTTTGAACCTGTGAAATGC
TTTACCTTGTTTACAATTTGGCAAAGTTGCAGTTTGTTCTTGTTTTTAGTTTAGTTTTGTTTTGGTGTTT
TGATACCTGTACTGTGTTCTTCACAGACCCTTTGTAGCGTGGTCAGGTCTGCTGTAACATTTCCCACCAA
CTCTCTTGCTGTCCACATCAACAGCTAAATCATTTATTCATATGGATCTCTACCATCCCCATGCCTTGCC
CAGGTCCAGTTCCATTTCTCTCATTCACAAGATGCTTTGAAGGTTCTGATTTTCAACTGATCAAACTAAT
GCAAAAAAAAAAGTATGTATTCTTCACTACTGAGTTTCTTCTTTGGAAACCATCACTATTGAGAGATGGG
AAAAACCTGAATGTATAAAGCATTTATTTGTCAATAAACTGCCTTTTGTAAGGGGTTTTCACAAAAAAAA
AAAAAAAA

Human CBL-B mRNA sequence - var3 (public gi: 862406) (SEQ ID NO: 355)

CTGGGTCCTGTGTGTGCCACAGGGGTGGGGTGTCCAGCGAGCGGTCTCCTCCTCCTGCTAGTGCTGCTGC
GGCGTCCCGCGGCCTCCCCGAGTCGGGCGGGAGGGGAGAGCGGGTGTGGATTTGTCTTGACGGTAATTGT
TGCGTTTCCACGTCTCGGAGGCCTGCGCGCTGGGTTGCTCCTTCTTCGGGAGCGAGCTGTTCTCAGCGAT
CCCACTCCCAGCCGGGGCTCCCCACACACACTGGGCTGCGTGCGTGTGGAGTGGGACCCGCGCACACGCG
TGTCTCTGGACAGCTACGGCGCCGAAAGAACTAAAATTCCAGATGGCAAACTCAATGAATGGCAGAAACC
CTGGTGGTCGAGGAGGAAATCCCCGAAAAGGTCGAATTTTGGGTATTATTGATGCTATTCAGGATGCAGT
TGGACCCCCTAAGCAAGCTGCCGCAGATCGCAGGACCGTGGAGAAGACTTGGAAGCTCATGGACAAAGTG
GTAAGACTGTGCCAAAATCCCAAACTTCAGTTGAAAAATAGCCCACCATATATACTTGATATTTTGCCTG
ATACATATCAGCATTTACGACTTATATTGAGTAAATATGATGACAACCAGAAACTTGCCCAACTCAGTGA
GAATGAGTACTTTAAAATCTACATTGATAGCCTTATGAAAAAGTCAAAACGGGCAATAAGACTCTTTAAA
GAAGGCAAGGAGAGAATGTATGAAGAACAGTCACAGGACAGACGAAATCTCACAAAACTGTCCCTTATCT
TCAGTCACATGCTGGCAGAAATCAAAGCAATCTTTCCCAATGGTCAATTCCAGGGAGATAACTTTCGTAT
CACAAAAGCAGATGCTGCTGAATTCTGGAGAAAGTTTTTTGGAGACAAAACTATCGTACCATGGAAAGTA
TTCAGACAGTGCCTTCATGAGGTCCACCAGATTAGCTCTAGCCTGGAAGCAATGGCTCTAAAATCAACAA

Figure 36 part - 13

TTGATTTAACTTGCAATGATTACATTTCAGTTTTTGAATTTGATATTTTTACCAGGCTGTTTCAGCCTTG
GGGCTCTATTTTGCGGAATTGGAATTTCTTAGCTGTGACACATCCAGGTTACATGGCATTTCTCACATAT
GATGAAGTTAAAGCACGACTACAGAAATATAGCACCAAACCCGGAAGCTATATTTTCCGGTTAAGTTGCA
CTCGATTGGGACAGTGGGCCATTGGCTATGTGACTGGGGATGGGAATATCTTACAGACCATACCTCATAA
CAAGCCCTTATTTCAAGCCCTGATTGATGGCAGCAGGGAAGGATTTTATCTTTATCCTGATGGGAGGAGT
TATAATCCTGATTTAACTGGATTATGTGAACCTACACCTCATGACCATATAAAAGTTACACAGGAACAAT
ATGAATTATATTGTGAAATGGGCTCCACTTTTCAGCTCTGTAAGATTTGTGCAGAGAATGACAAAGATGT
CAAGATTGAGCCTTGTGGGCATTTGATGTGCACCTCTTGCCTTACGGCATGGCAGGAGTCGGATGGTCAG
GGCTGCCCTTTCTGTCGTTGTGAAATAAAAGGAACTGAGCCCATAATCGTGGACCCCTTTGATCCAAGAG
ATGAAGGCTCCAGGTGTTGCAGCATCATTGACCCCTTTGGCATGCCGATGCTAGACTTGGACGACGATGA
TGATCGTGAGGAGTCCTTGATGATGAATCGGTTGGCAAACGTCCGAAAGTGCACTGACAGGCAGAACTCA
CCAGTCACATCACCAGGATCCTCTCCCCTTGCCCAGAGAAGAAAGCCACAGCCTGACCCACTCCAGATCC
CACATCTAAGCCTGCCACCCGTGCCTCCTCGCCTGGATCTAATTCAGAAAGGCATAGTTAGATCTCCCTG
TGGCAGCCCAACAGGTTCACCAAAGTCTTCTCCTTGCATGGTGAGAAAACAAGATAAACCACTCCCAGCA
CCACCTCCTCCCTTAAGAGATCCTCCTCCACCGCCACCTGAAAGACCTCCACCAATCCCACCAGACAATA
GACTGAGTAGACACATCCATCATGTGGAAAGCGTGCCTTCCAGAGACCCGCCAATGCCTCTTGAAGCATG
GTGCCCTCGGGATGTGTTTGGGACTAATCAGCTTGTGGGATGTCGACTCCTAGGGGAGGGCTCTCCAAAA
CCTGGAATCACAGCGAGTTCAAATGTCAATGGAAGGCACAGTAGAGTGGGCTCTGACCCAGTGCTTATGC
GGAAACACAGACGCCATGATTTGCCTTTAGAAGGAGCTAAGGTCTTTTCCAATGGTCACCTTGGAAGTGA
AGAATATGATGTTCCTCCCCGGCTTTCTCCTCCTCCTCCAGTTACCACCCTCCTCCCTAGCATAAAGTGT
ACTGGTCCGTTAGCAAATTCTCTTTCAGAGAAAACAAGAGACCCAGTAGAGGAAGATGATGATGAATACA
AGATTCCTTCATCCCACCCTGTTTCCCTGAATTCACAACCATCTCATTGTCATAATGTAAAACCTCCTGT
TCGGTCCTGTGATAATGGTCACTGTATGCTGAATGGAACACATGGTCCATCTTCAGAGAAGAAATCAAAC
ATCCCTGACTTAAGCATATATTTAAAGGGAGATGTTTTTGATTCAGCCTCTGATCCCGTGCCATTACCAC
CTGCCAGGCCTCCAACTCGGGACAATCCAAAGCATGGTTCTTCACTCAACAGGACGCCCTCTGATTATGA
TCTTCTCATCCCTCCATTAGGTGAAGATGCTTTTGATGCCCTCCCTCCATCTCTCCCACCTCCCCCACCT
CCTGCAAGGCATAGTCTCATTGAACATTCAAAACCTCCTGGCTCCAGTAGCCGGCCATCCTCAGGACAGG
ATCTTTTTCTTCTTCCTTCAGATCCCTTTGTTGATCTAGCAAGTGGCCAAGTTCCTTTGCCTCCTGCTAG
AAGGTTACCAGGTGAAAATGTCAAAACTAACAGAACATCACAGGACTATGATCAGCTTCCTTCATGTTCA
GATGGTTCACAGGCACCAGCCAGACCCCCTAAACCACGACCGCGCAGGACTGCACCAGAAATTCACCACA
GAAAACCCCATGGGCCTGAGGCGGCATTGGAAAATGTCGATGCAAAAATTGCAAAACTCATGGGAGAGGG
TTATGCCTTTGAAGAGGTGAAGAGAGCCTTAGAGATAGCCCAGAATAATGTCGAAGTTGCCCGGAGCATC
CTCCGAGAATTTGCCTTCCCTCCTCCAGTATCCCCACGTCTAAATCTATAGCAGCCAGAACTGTAGACAC
CAAAATGGAAAGCAATCGATGTATTCCAAGAGTGTGGAAATAAAGAGAACTGAGATGGAATTCAAGAGAG
AAGTGTCTCCTCCTCGTGTAGCAGCTTGAGAAGAGGCTTGGGAGTGCAGCTTCTCAAAGGAGACCGATGC
TTGCTCAGGATGTCGACAGCTGTGGCTTCCTTGTTTTTGCTAGCCATATTTTTAAATCAGGGTTGAACTG
ACAAAAATAATTTAAAGACGTTTACTTCCCTTGAACTTTGAACCTGTGAAATGCTTTACCTTGTTTACAA
TTTGGCAAAGTTGCAGTTTGTTCTTGTTTTTAGTTTAGTTTTGTTTTGGTGTTTTGATACCTGTACTGTG
TTCTTCACAGACCCTTTGTAGCGTGGTCAGGTCTGCTGTAACATTTCCCACCAACTCTCTTGCTGTCCAC
ATCAACAGCTAAATCATTTATTCATATGGATCTCTACCATCCCCATGCCTTGCCCAGGTCCAGTTCCATT
TCTCTCATTCACAAGATGCTTTGAAGGTTCTGATTTTCAACTGATCAAACTAATGCAAAAAAAAAAAGTA
TGTATTCTTCACTACTGAGTTTCTTCTTTGGAAACCATCACTATTGAGAGATGGGAAAAACCTGAATGTA
TAAAGCATTTATTTGTCAATAAACTGCCTTTTGTAAGGGGTTTTCACATAAAAAAAAAAAAA

Human CBL-B mRNA sequence - var4 (public gi: 862408) (SEQ ID NO: 356)

CTGGGTCCTGTGTGTGCCACAGGGGTGGGGTGTCCAGCGAGCGGTCTCCTCCTCCTGCTAGTGCTGCTGC
GGCGTCCCGCGGCCTCCCCGAGTCGGGCGGGAGGGGAGAGCGGGTGTGGATTTGTCTTGACGGTAATTGT
TGCGTTTCCACGTCTCGGAGGCCTGCGCGCTGGGTTGCTCCTTCTTCGGGAGCGAGCTGTTCTCAGCGAT
CCCACTCCCAGCCGGGGCTCCCCACACACACTGGGCTGCGTGCGTGTGGAGTGGGACCCGCGCACACGCG
TGTCTCTGGACAGCTACGGCGCCGAAAGAACTAAAATTCCAGATGGCAAACTCAATGAATGGCAGAAACC
CTGGTGGTCGAGGAGGAAATCCCCGAAAAGGTCGAATTTTGGGTATTATTGATGCTATTCAGGATGCAGT
TGGACCCCCTAAGCAAGCTGCCGCAGATCGCAGGACCGTGGAGAAGACTTGGAAGCTCATGGACAAAGTG
GTAAGACTGTGCCAAAATCCCAAACTTCAGTTGAAAAATAGCCCACCATATATACTTGATATTTTGCCTG
ATACATATCAGCATTTACGACTTATATTGAGTAAATATGATGACAACCAGAAACTTGCCCAACTCAGTGA
GAATGAGTACTTTAAAATCTACATTGATAGCCTTATGAAAAAGTCAAAACGGGCAATAAGACTCTTTAAA
GAAGGCAAGGAGAGAATGTATGAAGAACAGTCACAGGACAGACGAAATCTCACAAAACTGTCCCTTATCT
TCAGTCACATGCTGGCAGAAATCAAAGCAATCTTTCCCAATGGTCAATTCCAGGGAGATAACTTTCGTAT
CACAAAAGCAGATGCTGCTGAATTCTGGAGAAAGTTTTTTGGAGACAAAACTATCGTACCATGGAAAGTA
TTCAGACAGTGCCTTCATGAGGTCCACCAGATTAGCTCTAGCCTGGAAGCAATGGCTCTAAAATCAACAA
TTGATTTAACTTGCAATGATTACATTTCAGTTTTTGAATTTGATATTTTTACCAGGCTGTTTCAGCCTTG
GGGCTCTATTTTGCGGAATTGGAATTTCTTAGCTGTGACACATCCAGGTTACATGGCATTTCTCACATAT
GATGAAGTTAAAGCACGACTACAGAAATATAGCACCAAACCCGGAAGCTATATTTTCCGGTTAAGTTGCA
CTCGATTGGGACAGTGGGCCATTGGCTATGTGACTGGGGATGGGAATATCTTACAGACCATACCTCATAA

Figure 36 part - 14

CAAGCCCTTATTTCAAGCCCTGATTGATGGCAGCAGGGAAGGATTTTATCTTTATCCTGATGGGAGGAGT
TATAATCCTGATTTAACTGGATTATGTGAACCTACACCTCATGACCATATAAAAGTTACACAGGAACAAT
ATGAATTATATTGTGAAATGGGCTCCACTTTTCAGCTCTGTAAGATTTGTGCAGAGAATGACAAAGATGT
CAAGATTGAGCCTTGTGGGCATTTGATGTGCACCTCTTGCCTTACGGCATGGCAGGAGTCGGATGGTCAG
GGCTGCCCTTTCTGTCGTTGTGAAATAAAAGGAACTGAGCCCATAATCGTGGACCCCTTTGATCCAAGAG
ATGAAGGCTCCAGGTGTTGCAGCATCATTGACCCCTTTGGCATGCCGATGCTAGACTTGGACGACGATGA
TGATCGTGAGGAGTCCTTGATGATGAATCGGTTGGCAAACGTCCGAAAGTGCACTGACAGGCAGAACTCA
CCAGTCACATCACCAGGATCCTCTCCCCTTGCCCAGAGAAGAAAGCCACAGCCTGACCCACTCCAGATCC
CACATCTAAGCCTGCCACCCGTGCCTCCTCGCCTGGATCTAATTCAGAAAGGCATAGTTAGATCTCCCTG
TGGCAGCCCAACAGGTTCACCAAAGTCTTCTCCTTGCATGGTGAGAAAACAAGATAAACCACTCCCAGCA
CCACCTCCTCCCTTAAGAGATCCTCCTCCACCGCCACCTGAAAGACCTCCACCAATCCCACCAGACAATA
GACTGAGTAGACACATCCATCATGTGGAAAGCGTGCCTTCCAGAGACCCGCCAATGCCTCTTGAAGCATG
GTGCCCTCGGGATGTGTTTGGGACTAATCAGCTTGTGGGATGTCGACTCCTAGGGGAGGGCTCTCCAAAA
CCTGGAATCACAGCGAGTTCAAATGTCAATGGAAGGCACAGTAGAGTGGGCTCTGACCCAGTGCTTATGC
GGAAACACAGACGCCATGATTTGCCTTTAGAAGGAGCTAAGGTCTTTTCCAATGGTCACCTTGGAAGTGA
AGAATATGATGTTCCTCCCCGGCTTTCTCCTCCTCCTCCAGTTACCACCCTCCTCCCTAGCATAAAGTGT
ACTGGTCCGTTAGCAAATTCTCTTTCAGAGAAAACAAGAGACCCAGTAGAGGAAGATGATGATGAATACA
AGATTCCTTCATCCCACCCTGTTTCCCTGAATTCACAACCATCTCATTGTCATAATGTAAAACCTCCTGT
TCGGTCCTGTGATAATGGTCACTGTATGCTGAATGGAACACATGGTCCATCTTCAGAGAAGAAATCAAAC
ATCCCTGACTTAAGCATATATTTAAAGGGAGATGTTTTTGATTCAGCCTCTGATCCCGTGCCATTACCAC
CTGCCAGGCCTCCAACTCGGGACAATCCAAAGCATGGTTCTTCACTCAACAGGACGCCCTCTGATTATGA
TCTTCTCATCCCTCCATTAGGTTGAAACCTTTAAAAAAGTTTTGAACAACCCACCCCTCCTTCTTTTAAT
TTCAGAATTTTCAGAATTCAGAGTTCAGTATAACACAGACTCACTGGGTTGTGAATTTGCCTGAAATTTG
AATGGGTTCTCCAGGTGCCGGTGACTCCCAAGTTCACGAGACCATTACTCCATGTAGATGATTAAGGTAG
TAGTGTAGTAGTTGGGCATCAGTCAGGTTTTAAGCAAGTTGTTTTGTCCATACTAAATGTAGTCTAAAAA
CACATGAGAGCTTTGTGCTCTAGTAGTTTTGAAGTGATGACTTGAAGTGTTGAGATTTTCTTTAAGTATA
ATAATTCTTAATAAATATGAACTTGCTTTTCTTGCAGCATGAGCACCAGTTCCACTTACGCTAATTAAAT
TATGCAAAATTAAATAGTTGTATGTAGAGAACTGATAATAAATTCTGTTTTATTCTAATCATTACAACTG
TAACACATTCAAAAAAAAAAA

Human CBL-B mRNA sequence - var5 (public gi: 862410) (SEQ ID NO: 357)

CTGGGTCCTGTGTGTGCCACAGGGGTGGGGTGTCCAGCGAGCGGTCTCCTCCTCCTGCTAGTGCTGCTGC
GGCGTCCCGCGGCCTCCCCGAGTCGGGCGGGAGGGGAGAGCGGGTGTGGATTTGTCTTGACGGTAATTGT
TGCGTTTCCACGTCTCGGAGGCCTGCGCGCTGGGTTGCTCCTTCTTCGGGAGCGAGCTGTTCTCAGCGAT
CCCACTCCCAGCCGGGGCTCCCCACACACACTGGGCTGCGTGCGTGTGGAGTGGGACCCGCGCACACGCG
TGTCTCTGGACAGCTACGGCGCCGAAAGAACTAAAATTCCAGATGGCAAACTCAATGAATGGCAGAAACC
CTGGTGGTCGAGGAGGAAATCCCCGAAAAGGTCGAATTTTGGGTATTATTGATGCTATTCAGGATGCAGT
TGGACCCCCTAAGCAAGCTGCCGCAGATCGCAGGACCGTGGAGAAGACTTGGAAGCTCATGGACAAAGTG
GTAAGACTGTGCCAAAATCCCAAACTTCAGTTGAAAAATAGCCCACCATATATACTTGATATTTTGCCTG
ATACATATCAGCATTTACGACTTATATTGAGTAAATATGATGACAACCAGAAACTTGCCCAACTCAGTGA
GAATGAGTACTTTAAAATCTACATTGATAGCCTTATGAAAAAGTCAAAACGGGCAATAAGACTCTTTAAA
GAAGGCAAGGAGAGAATGTATGAAGAACAGTCACAGGACAGACGAAATCTCACAAAACTGTCCCTTATCT
TCAGTCACATGCTGGCAGAAATCAAAGCAATCTTTCCCAATGGTCAATTCCAGGGAGATAACTTTCGTAT
CACAAAAGCAGATGCTGCTGAATTCTGGAGAAAGTTTTTTGGAGACAAAACTATCGTACCATGGAAAGTA
TTCAGACAGTGCCTTCATGAGGTCCACCAGATTAGCTCTAGCCTGGAAGCAATGGCTCTAAAATCAACAA
TTGATTTAACTTGCAATGATTACATTTCAGTTTTTGAATTTGATATTTTTACCAGGCTGTTTCAGCCTTG
GGGCTCTATTTTGCGGAATTGGAATTTCTTAGCTGTGACACATCCAGGTTACATGGCATTTCTCACATAT
GATGAAGTTAAAGCACGACTACAGAAATATAGCACCAAACCCGGAAGCTATATTTTCCGGTTAAGTTGCA
CTCGATTGGGACAGTGGGCCATTGGCTATGTGACTGGGGATGGGAATATCTTACAGACCATACCTCATAA
CAAGCCCTTATTTCAAGCCCTGATTGATGGCAGCAGGGAAGGATTTTATCTTTATCCTGATGGGAGGAGT
TATAATCCTGATTTAACTGGATTATGTGAACCTACACCTCATGACCATATAAAAGTTACACAGGAACAAT
ATGAATTATATTGTGAAATGGGCTCCACTTTTCAGCTCTGTAAGATTTGTGCAGAGAATGACAAAGATGT
CAAGATTGAGCCTTGTGGGCATTTGATGTGCACCTCTTGCCTTACGGCATGGCAGGAGTCGGATGGTCAG
GGCTGCCCTTTCTGTCGTTGTGAAATAAAAGGAACTGAGCCCATAATCGTGGACCCCTTTGATCCAAGAG
ATGAAGGCTCCAGGTGTTGCAGCATCATTGACCCCTTTGGCATGCCGATGCTAGACTTGGACGACGATGA
TGATCGTGAGGAGTCCTTGATGATGAATCGGTTGGCAAACGTCCGAAAGTGCACTGACAGGCAGAACTCA
CCAGTCACATCACCAGGATCCTCTCCCCTTGCCCAGAGAAGAAAGCCACAGCCTGACCCACTCCAGATCC
CACATCTAAGCCTGCCACCCGTGCCTCCTCGCCTGGATCTAATTCAGAAAGGCATAGTTAGATCTCCCTG
TGGCAGCCCAACAGGTTCACCAAAGTCTTCTCCTTGCATGGTGAGAAAACAAGATAAACCACTCCCAGCA
CCACCTCCTCCCTTAAGAGATCCTCCTCCACCGCCACCTGAAAGACCTCCACCAATCCCACCAGACAATA
GACTGAGTAGACACATCCATCATGTGGAAAGCGTGCCTTCCAGAGACCCGCCAATGCCTCTTGAAGCATG
GTGCCCTCGGGATGTGTTTGGGACTAATCAGCTTGTGGGATGTCGACTCCTAGGGGAGGGCTCTCCAAAA
CCTGGAATCACAGCGAGTTCAAATGTCAATGGAAGGCACAGTAGAGTGGGCTCTGACCCAGTGCTTATGC

Figure 36 part - 15

GGAAACACAGACGCCATGATTTGCCTTTAGAAGGAGCTAAGGTCTTTTCCAATGGTCACCTTGGAAGTGA
AGAATATGATGTTCCTCCCCGGCTTTCTCCTCCTCCTCCAGTTACCACCCTCCTCCCTAGCATAAAGTGT
ACTGGTCCGTTAGCAAATTCTCTTTCAGAGAAAACAAGAGACCCAGTAGAGGAAGATGATGATGAATACA
AGATTCCTTCATCCCACCCTGTTTCCCTGAATTCACAACCATCTCATTGTCATAATGTAAAACCTCCTGT
TCGGTCCTGTGATAATGGTCACTGTATGCTGAATGGAACACATGGTCCATCTTCAGAGAAGAAATCAAAC
ATCCCTGACTTAAGCATATATTTAAAGGGTACGTATAGAATATAATTTCCTTTGTGATGTACATCTTAAT
GGTCAGAATTTAAAGGCAAAATTTCATGCCATTGTACTGAAAATACATTAAGGTTTTGTGTTATCCTCTA
GGAGATGTTTTTGATTCAGCCTCTGATCCCGTGCCATTACCACCTGCCAGGCCTCCAACTCGGGACAATC
CAAAGCATGGTTCTTCACTCAACAGGACGCCCTCTGATTATGATCTTCTCATCCCTCCATTAGGTTGAAA
CCTTTAAAAAAGTTTTGAACAACCCACCCCTCCTTCTTTTAATTTCAGAATTTTCAGAATTCAGAGTTCA
GTATAACACAGACTCACTGGGTTGTGAATTTGCCTGAAATTTGAATGGGTTCTCCAGGTGCCGGTGACTC
CCAAGTTCACGAGACCATTACTCCATGTAGATGATTAAGGTAGTAGTGTAGTAGTTGGGCATCAGTCAGG
TTTTAAGCAAGTTGTTTTGTCCATACTAAATGTAGTCTAAAAACACATGAGAGCTTTGTGCTCTAGTAGT
TTTGAAGTGATGACTTGAAGTGTTGAGATTTTCTTTAAGTATAATAATTCTTAATAAATATGAACTTGCT
TTTCTTGCAGCATGAGCACCAGTTCCACTTACGCTAATTAAATTATGCAAAATTAAATAGTTGTATGTAG
AGAACTGATAATAAATTCTGTTTTATTCTAATCATTACAACTGTAACACATTCAAAAAAAAAAA

Human CBL-B mRNA sequence - var6 (public gi: 21753192) (SEQ ID NO: 358)
AGTGCTGCTGCGGCGTCCCGCGGCCTCCCCGAGTCGGGCGGGAGGGGAGAGCGGGTGTGGATTTGTCTTG
ACGGTAATTGTTGCGTTTCCACGTCTCGGAGGCCTGCGCGCTGGGTTGCTCCTTCTTCGGGAGCGAGCTG
TTCTCAGCGATCCCACTCCCAGCCGGGGCTCCCCACACACACTGGGCTGCGTGCGTGTGGAGTGGGACCC
GCGCACACGCGTGTCTCTGGACAGCTACGGCGCCGAAAGAACTAAAATTCCAGATGGCAAACTCAATGAA
TGGCAGAAACCCTGGTGGTCGAGGAGGAAATCCCCGAAAAGGTCGAATTTTGGGTATTATTGATGCTATT
CAGGATGCAGTTGGACCCCCTAAGCAAGCTGCCGCAGATCGCAAAACCTGGAATCACAGCGAGTTCAAAT
GTCAATGGAAGGCACAGTAGAGTGGGCTCTGACCCAGTGCTTATGCGGAAACACAGACGCCATGATTTGC
CTTTAGAAGGAGCTAAGGTCTTTTCCAATGGTCACCTTGGAAGTGAAGAATATGATGTTCCTCCCCGGCT
TTCTCCTCCTCCTCCAGTTACCACCCTCCTCCCTAGCATAAAGTGTACTGGTCCGTTAGCAAATTCTCTT
TCAGAGAAAACAAGAGACCCAGTAGAGGAAGATGATGATGAATACAAGATTCCTTCATCCCACCCTGTTT
CCCTGAATTCACAACCATCTCATTGTCATAATGTAAAACCTCCTGTTCGGTCTTGTGATAATGGTCACTG
TATGCTGAATGGAACACATGGTCCATCTTCAGAGAAGAAATCAAACATCCCTGACTTAAGCATATATTTA
AAGGGAGATGTTTTTGATTCAGCCTCTGATCCCGTGCCATTACCACCTGCCAGGCCTCCAACTCGGGACA
ATCCAAAGCATGGTTCTTCACTCAACAGGACGCCCTCTGATTATGATCTTCTCATCCCTCCATTAGGTGA
AGATGCTTTTGATGCCCTCCCTCCATCTCTCCCACCTCCCCCACCTCCTGCAAGGCATAGTCTCATTGAA
CATTCAAAACCTCCTGGCTCCAGTAGCCGGCCATCCTCAGGACAGGATCTTTTTCTTCTTCCTTCAGATC
CCTTTGTTGATCTAGCAAGTGGCCAAGTTCCTTTGCCTCCTGCTAGAAGGTTACCAGGTGAAAATGTCAA
AACTAACAGAACATCACAGGACTATGATCAGCTTCCTTCATGTTCAGATGGTTCACAGGCATCAGCCAGA
CCCCCTAAACCACGACCGCGCAGGACTGCACCAGAAATTCACCACAGAAAACCCCATGGGCCTGAGGCGG
CATTGGAAAATGTCGATGCAAAAATTGCAAAACTCATGGGAGAGGGTTATGCCTTTGAAGAGGTGAAGAG
AGCCTTAGAGATAGCCCAGAATAATGTCGAAGTTGCCCGGAGCATCCTCCGAGAATTTGCCTTCCCTCCT
CCAGTATCCCCACGTCTAAATCTATAGCAGCCAGAACTGTAGACACCAAAATGGAAAGCAATCGATGTAT
TCCAAGAGTGTGGAAATAAAGAGAACTGAGATGGAATTCAAGAGAGAAGTGTCTCCTCCTCGTGTAGCAG
CTTGAGAAGAGGCTTGGGAGTGCAGCTTCTCAAAGGAGACCGATGCTTGCTCAGGATGTCGACAGCTGTG
GCTTCCTTGTTTTTGCTAGCCATATTTTTAAATCAGGGTTGAACTGACAAAAATAATTTAAAGACGTTTA
CTTCCCTTGAACTTTGAACCTGTGAAATGCTTTACCTTGTTTACAGTTTGGCAAAGTTGCAGTTTGTTCT
TGTTTTTAGTTTAGTTTTGTTTTGGTGTTTTGTACCTGTACTGTGTTCTTCACAGACCCTTTGTAGCGTG
GTCAGGTCTGCTGTAACATTTCCCACCAACTCTCTTGCTGTCCACATCAACAGCTAAATCATTTATTCAT
ATGGATCTCTACCATCCCCATGCCTTGCCCAGGTCCAGTTCCATTTCTCTCATTCACAAGATGCTTTGAA
GGTTCTGATTTTCAACTGATCAAACTAATGCAAAAAAAAAAAAAAAAAAAAAAAAAAAG

Human Cbl-b mRNA sequence - var 7 (SEQ ID NO: 359)
CGTNTTTGGNANNCACTACAGGGGATGTTTAATACACACTCACAATGCGCATGATGTNTATAACTATCTATTCNATGAT
G
TAAGATACCCCACTCAAACCCATAAAAAAAGAGCATCTTTAATACGACTCACTATANGGCGAGCGCACGCCATGGCAGGT
A
CCCATACGACGTACCAGATTACGCTCATATGGCCATGGAGGCCAGNGAATTCCACCCAAGCNGTGGTATCAACGCANAG
T
GGACTCTGACCCANTGCTTATGCGGAAACACAGACGCCATGATTTGCCTTTAGAAGGAGCTAAGGTCTCTTCCAATGGT
C
ACCTTGGAAGTGAAGAATATGATGTTCCTCCCCGGCTTTCTCCTCCTCCTCCAGTTACCACCCTNCTCCCTAGCATAAA
G
TGTACTGGTCCGTTAGCAAATTCTCTTTCAGAGAAAACAAGAGACCCAGTAGAGGAAGATGATGATGAATACAAGATTC
C

Figure 36 part - 16

TTCATCCCACCCTGTTTCCCTGAATTCACAACCATCTCATTGTCATAATGTAAAACCTCCTGTTCGGTCTTGTGATAAT
G
GTCACTGTATGCTGAATGGAACACATGGTCCATCTTCAGAGAAGAAATCAAACATCCCTGACTTAAGCATATATTTAAA
G
GGTGAAGATGCTTTTGATGCCCTCCCTCCATCTCTCCCACCTCCCCCACCTCCTGCAAGGCATAGTCTCATTGAACATT
C
AAAACCTCCTGGCTCCAGTAGCCGGCCATCCTCAGGACAGGATCTTTTTCTTCTTCCTTCAGATCCCTTTGTTGATCTA
G
CAAGTGGCCAAGTTCCTTTGCCTCCCGCTAGAAGGTTACCAGGTGAAAATGTCAAAACTAACAGGACATCACAGGACTA
T
GATCAGCTTCCTTCATGTTCAGATGGTTCACAGGCACCAGCCAGACCCCCTAAACCACGACCGCGCAGGACTGCACCAG
A
AATTCACCACAGAAAACCCCATGGGCCTGAGGCGGCATTGGAAAATGTCGATGCAAAAATTGCAAAACTCATGGGAGAG
G
GTTATGCCTTTGAAGAGGTGAAGAGAGCCTTAGAGATAGCCCAGAATAATGTCGAAGTTGCCCGGAGCATCCTCCGAGA
A
TTTGCCTTCCCTCCTCCAGTATCCCCACGTCTAAATCTATAGCAGCCAGAACTGTAGACACCAAAATGGAAAGCAATCG
A
TGTATTCCAAGAGTGTGGAAATAAAGAGAACTGAGATGGAATTCAAGAGAGAAGTGTCTCCTCCTCGTGTAGCAGCTTG
A
GAAGAGGCTTGGGAGTGCAGCTTCTCAAAGAAAACCGATGCTTGCTCAGGATGTCNACAGCTGNGGNCTNCCTTGTTTT
T
GCTAGCCATTTTTTTAAATNAGGGTTGAACTNGANAAAANTATTTAAAAACGTTTACCTCCCTTGAACTTTGAACCTGG
G
AAAGNC

Human Cbl-b Protein sequence - var 7 (SEQ ID NO: 361)
MRKHRRHDLPLEGAKVSSNGHLGSEEYDVPPRLSPPPPVTTLLPSIKCTGPLANSLSEKTRDPVEEDDDEYKIPSSHPV
S
LNSQPSHCHNVKPPVRSCDNGHCMLNGTHGPSSEKKSNIPDLSIYLKGEDAFDALPPSLPPPPPPARHSLIEHSKPPGS
S
SRPSSGQDLFLLPSDPFVDLASGQVPLPPARRLPGENVKTNRTSQDYDQLPSCSDGSQAPARPPKPRPRRTAPEIHHRK
P
HGPEAALENVDAKIAKLMGEGYAFEEVKRALEIAQNNVEVARSILREFAFPPPVSPRLNL

Human cbl-B clone3Gd114 (partial sequence) (SEQ ID NO: 360)
ACTCTGACCCAGTGCTTATGCGGAAACACAGACGCCATGATTTGCCTTTA
GAAGGAGCTAAGGTCTCTTCCAATGGTCACCTTGGAAGTGAAGAATATGA
TGTTCCTCCCCGGCTTTCTCCTCCTCCTCCAGTTACCACCCTCCTCCCTA
GCATAAAGTGTACTGGTCCGTTAGCAAATTCTCTTTCAGAGAAAACAAGA
GACCCAGTAGAGGAAGATGATGATGAATACAAGATTCCTTCATCCCACCC
TGTTTCCCTGAATTCACAACCATCTCATTGTCATAATGTAAAACCTCCTG
TTCGGTCTTGTGATAATGGTCACTGTATGCTGAATGGAACACATGGTCCA
TCTTCAGAGAAGAAATCAAACATCCCTGACTTAAGCATATATTTAAAGGG
TGAAGATGCTTTTGATGCCCTCCCTCCATCTCTCCCACCTCCCCCACCTC
CTGCAAGGCATAGTCTCATTGAACATTCAAAACCTCCTGGCTCCAGTAGC
CGGCCATCCTCAGGACAGGATCTTTTTCTTCTTCCTTCAGATCCCTTTGT
TGATCTAGCAAGTGGCCAAGTTCCTTTGCCTCCCGCTAGAAGGTTACCAG
GTGAAAATGTCAAAACTAACAGGACATCACAGGACTATGATCAGCTTCCT
TCATGTTCAGATGGTTCACAGGCACCAGCCAGACCCCCTAAACCACGACC
GCGCAGGACTGCACCAGAAATTCACCACAGAAAACCCCATGGGCCTGAGG
CGGCATTGGAAAATGTCGATGCAAAAATTGCAAAACTCATGGGAGAGGGT
TATGCCTTTGAAGAGGTGAAGAGAGCCTTAGAGATAGCCCAGAATAATGT
CGAAGTTGCCCGGAGCATCCTCCGAGAATTTGCCTTCCCTCCTCCAGTAT
CCCCACGTCTAAATCTATAGCAGCCAGAACTGTAGACACCAAAATGGAAA
GCAATCGATGTATTCCAAGAGTGTGGAAATAAAGAGAACTGAGATGGAAT
TCAAGAGAGAAGTGTCTCCTCCTCGTGTAGCAGCTTGAGAAGAGGCTTGG
GAGTGCAGCTTCTCAAAGAAAACCGATGCTTGCTCAGGATGTCGACAGCT
GTGGCTTCCTTGTTTTTGCTAGCCATTTTTTTAAATCAGGGTTGAACTGG
AAAAAATTATTTAAAAACGTTTACCTCCCTTGAACTTTGAACCTGGGAAA

Figure 36 part - 17

GGC

Human CblB protein in 3Gd114 Translation of cbl-B clone3Gd114 starting at base pair 3 (SEQ ID NO: 398)
SDPVLMRKHRRHDLPLEGAKVSSNGHLGSEEYDVPPRLSPPPPVTTLLPS
IKCTGPLANSLSEKTRDPVEEDDDEYKIPSSHPVSLNSQPSHCHNVKPPV
RSCDNGHCMLNGTHGPSSEKKSNIPDLSIYLKGEDAFDALPPSLPPPPPP
ARHSLIEHSKPPGSSSRPSSGQDLFLLPSDPFVDLASGQVPLPPARRLPG
ENVKTNRTSQDYDQLPSCSDGSQAPARPPKPRPRRTAPEIHHRKPHGPEA

Human CBL-B Protein sequence - var1 (public gi: 4757920) (SEQ ID NO: 227)
MANSMNGRNPGGRGGNPRKGRILGIIDAIQDAVGPPKQAAADRRTVEKTWKLMDKVVRLCQNPKLQLKNS
PPYILDILPDTYQHLRLILSKYDDNQKLAQLSENEYFKIYIDSLMKKSKRAIRLFKEGKERMYEEQSQDR
RNLTKLSLIFSHMLAEIKAIFPNGQFQGDNFRITKADAAEFWRKFFGDKTIVPWKVFRQCLHEVHQISSS
LEAMALKSTIDLTCNDYISVFEFDIFTRLFQPWGSILRNWNFLAVTHPGYMAFLTYDEVKARLQKYSTKP
GSYIFRLSCTRLGQWAIGYVTGDGNILQTIPHNKPLFQALIDGSREGFYLYPDGRSYNPDLTGLCEPTPH
DHIKVTQEQYELYCEMGSTFQLCKICAENDKDVKIEPCGHLMCTSCLTAWQESDGQGCPFCRCEIKGTEP
IIVDPFDPRDEGSRCCSIIDPFGMPMLDLDDDDDREESLMMNRLANVRKCTDRQNSPVTSPGSSPLAQRR
KPQPDPLQIPHLSLPPVPPRLDLIQKGIVRSPCGSPTGSPKSSPCMVRKQDKPLPAPPPPLRDPPPPPPE
RPPPIPPDNRLSRHIHHVESVPSRDPPMPLEAWCPRDVFGTNQLVGCRLLGEGSPKPGITASSNVNGRHS
RVGSDPVLMRKHRRHDLPLEGAKVFSNGHLGSEEYDVPPRLSPPPPVTTLLPSIKCTGPLANSLSEKTRD
PVEEDDDEYKIPSSHPVSLNSQPSHCHNVKPPVRSCDNGHCMLNGTHGPSSEKKSNIPDLSIYLKGTYRI

Human CBL-B Protein sequence - var2 (public gi: 23273909) (SEQ ID NO: 228)
MANSMNGRNPGGRGGNPRKGRILGIIDAIQDAVGPPKQAAADRRTVEKTWKLMDKVVRLCQNPKLQLKNS
PPYILDILPDTYQHLRLILSKYDDNQKLAQLSENEYFKIYIDSLMKKSKRAIRLFKEGKERMYEEQSQDR
RNLTKLSLIFSHMLAEIKAIFPNGQFQGDNFRITKADAAEFWRKFFGDKTIVPWKVFRQCLHEVHQISSG
LEAMALKSTIDLTCNDYISVFEFDIFTRLFQPWGSILRNWNFLAVTHPGYMAFLTYDEVKARLQKYSTKP
GSYIFRLSCTRLGQWAIGYVTGDGNILQTIPHNKPLFQALIDGSREGFYLYPDGRSYNPDLTGLCEPTPH
DHIKVTQEQYELYCEMGSTFQLCKICAENDKDVKIEPCGHLMCTSCLTAWQESDGQGCPFCRCEIKGTEP
IIVDPFDPRDEGSRCCSIIDPFGMPMLDLDDDDDREESLMMNRLANVRKCTDRQNSPVTSPGSSPLAQRR
KPQPDPLQIPHLSLPPVPPRLDLIQKGIVRSPCGSPTGSPKSSPCMVRKQDKPLPAPPPPLRDPPPPPPE
RPPPIPPDNRLSRHIHHVESVPSKDPPMPLEAWCPRDVFGTNQLVGCRLLGEGSPKPGITASSNVNGRHS
RVGSDPVLMRKHRRHDLPLEGAKVFSNGHLGSEEYDVPPRLSPPPPVTTLLPSIKCTGPLANSLSEKTRD
PVEEDDDEYKIPSSHPVSLNSQPSHCHNVKPPVRSCDNGHCMLNGTHGPSSEKKSNIPDLSIYLKGDVFD
SASDPVPLPPARPPTRDNPKHGSSLNRTPSDYDLLIPPLGEDAFDALPPSLPPPPPPARHSLIEHSKPPG
SSSRPSSGQDLFLLPSDPFVDLASGQVPLPPARRLPGENVKTNRTSQDYDQLPSCSDGSQAPARPPKPRP
RRTAPEIHHRKPHGPEAALENVDAKIAKLMGEGYAFEEVKRALEIAQNNVEVARSILREFAFPPPVSPRL
NL

Human CBL-B Protein sequence - var3 (public gi: 862407) (SEQ ID NO: 229)
MANSMNGRNPGGRGGNPRKGRILGIIDAIQDAVGPPKQAAADRRTVEKTWKLMDKVVRLCQNPKLQLKNS
PPYILDILPDTYQHLRLILSKYDDNQKLAQLSENEYFKIYIDSLMKKSKRAIRLFKEGKERMYEEQSQDR
RNLTKLSLIFSHMLAEIKAIFPNGQFQGDNFRITKADAAEFWRKFFGDKTIVPWKVFRQCLHEVHQISSS
LEAMALKSTIDLTCNDYISVFEFDIFTRLFQPWGSILRNWNFLAVTHPGYMAFLTYDEVKARLQKYSTKP
GSYIFRLSCTRLGQWAIGYVTGDGNILQTIPHNKPLFQALIDGSREGFYLYPDGRSYNPDLTGLCEPTPH
DHIKVTQEQYELYCEMGSTFQLCKICAENDKDVKIEPCGHLMCTSCLTAWQESDGQGCPFCRCEIKGTEP
IIVDPFDPRDEGSRCCSIIDPFGMPMLDLDDDDDREESLMMNRLANVRKCTDRQNSPVTSPGSSPLAQRR
KPQPDPLQIPHLSLPPVPPRLDLIQKGIVRSPCGSPTGSPKSSPCMVRKQDKPLPAPPPPLRDPPPPPPE
RPPPIPPDNRLSRHIHHVESVPSRDPPMPLEAWCPRDVFGTNQLVGCRLLGEGSPKPGITASSNVNGRHS
RVGSDPVLMRKHRRHDLPLEGAKVFSNGHLGSEEYDVPPRLSPPPPVTTLLPSIKCTGPLANSLSEKTRD
PVEEDDDEYKIPSSHPVSLNSQPSHCHNVKPPVRSCDNGHCMLNGTHGPSSEKKSNIPDLSIYLKGDVFD
SASDPVPLPPARPPTRDNPKHGSSLNRTPSDYDLLIPPLGEDAFDALPPSLPPPPPPARHSLIEHSKPPG
SSSRPSSGQDLFLLPSDPFVDLASGQVPLPPARRLPGENVKTNRTSQDYDQLPSCSDGSQAPARPPKPRP
RRTAPEIHHRKPHGPEAALENVDAKIAKLMGEGYAFEEVKRALEIAQNNVEVARSILREFAFPPPVSPRL
NL

Human CBL-B Protein sequence - var4 (public gi: 862409) (SEQ ID NO: 230)
MANSMNGRNPGGRGGNPRKGRILGIIDAIQDAVGPPKQAAADRRTVEKTWKLMDKVVRLCQNPKLQLKNS
PPYILDILPDTYQHLRLILSKYDDNQKLAQLSENEYFKIYIDSLMKKSKRAIRLFKEGKERMYEEQSQDR

Figure 36 part - 18

RNLTKLSLIFSHMLAEIKAIFPNGQFQGDNFRITKADAAEFWRKFFGDKTIVPWKVFRQCLHEVHQISSS
LEAMALKSTIDLTCNDYISVFEFDIFTRLFQPWGSILRNWNFLAVTHPGYMAFLTYDEVKARLQKYSTKP
GSYIFRLSCTRLGQWAIGYVTGDGNILQTIPHNKPLFQALIDGSREGFYLYPDGRSYNPDLTGLCEPTPH
DHIKVTQEQYELYCEMGSTFQLCKICAENDKDVKIEPCGHLMCTSCLTAWQESDGQGCPFCRCEIKGTEP
IIVDPFDPRDEGSRCCSIIDPFGMPMLDLDDDDDREESLMMNRLANVRKCTDRQNSPVTSPGSSPLAQRR
KPQPDPLQIPHLSLPPVPPRLDLIQKGIVRSPCGSPTGSPKSSPCMVRKQDKPLPAPPPPLRDPPPPPPE
RPPPIPPDNRLSRHIHHVESVPSRDPPMPLEAWCPRDVFGTNQLVGCRLLGEGSPKPGITASSNVNGRHS
RVGSDPVLMRKHRRHDLPLEGAKVFSNGHLGSEEYDVPPRLSPPPPVTTLLPSIKCTGPLANSLSEKTRD
PVEEDDDEYKIPSSHPVSLNSQPSHCHNVKPPVRSCDNGHCMLNGTHGPSSEKKSNIPDLSIYLKGDVFD
SASDPVPLPPARPPTRDNPKHGSSLNRTPSDYDLLIPPLG

Unigene Name: CENTB1 Unigene ID: Hs.337242

Human CENTB1 mRNA sequence - var1 (public gi: 495679) (SEQ ID NO: 37)
GGGGTGAGAGCTCCTCCTAGGACACCCCTTTCCCCTTGGGGAAAGAATTGTGCCCCCAGGCCCTTCCCCG
CGGAGGTCCCTCTCCTCCTTCCCCCTCATCTCCCCTTCCTGGGACAGAAAGTGCCTCCACCTGCATCCCC
AGGGGCCCGGCCTCCAGGGCCCGCTGGCCCCACAGCAGGCAAGCTGAGATGACGGTCAAGCTGGATTTCG
AGGAGTGTCTCAAGGACTCACCCCGTTTCCGAGCCTCTATTGAGCTGGTGGAAGCCGAAGTGTCAGAATT
GGAGACCCGTCTGGAAAAGCTCCTGAAACTGGGCACTGGTCTCCTGGAAAGTGGGCGCCATTACCTTGCT
GCCAGCCGCGCCTTCGTTGTCGGCATTTGTGACCTGGCCCGCCTGGGTCCACCAGAGCCCATGATGGCGG
AGTGTCTGGAAAAATTCACCGTGAGCCTGAACCACAAGCTGGACAGCCATGCGGAGCTTCTAGATGCCAC
CCAACACACACTGCAGCAGCAGATCCAGACCCTGGTCAAGGAAGGTCTGCGGGGTTTCCGAGAGGCTCGC
CGGGATTTCTGGCGGGGGGCTGAGAGCCTGGAGGCTGCCCTGACCCACAACGCAGAGGTTCCCAGGCGCC
GGGCCCAGGAGGCAGAAGAGGCAGGAGCTGCTTTGAGGACGGCTCGAGCTGGGTACCGGGGACGGGCACT
GGATTATGCCCTGCAGATCAACGTGATTGAGGACAAGAGGAAGTTTGACATCATGGAGTTTGTGCTGCGT
TTGGTGGAGGCCCAGGCTACCCATTTCCAGCAGGGCCATGAGGAGCTGAGCCGGCTGTCCCAGTATCGAA
AGGAGCTGGGCGCCCAGTTGCACCAGCTGGTCTTGAATTCAGCACGAGAGAAGAGGGACATGGAGCAGAG
ACACGTGCTGCTGAAACAGAAGGAGCTGGGTGGGGAGGAGCCAGAACCAAGCTTAAGAGAGGGGCCTGGT
GGCCTGGTGATGGAAGGACATCTCTTCAAACGGGCCAGCAACGCATTTAAGACCTGGAGCAGACGCTGGT
TCACCATTCAGAGCAACCAACTGGTTTACCAGAAGAAGTACAAGGACCCTGTGACTGTGGTGGTGGATGA
CCTTCGTCTCTGCACAGTGAAACTCTGCCCTGACTCAGAAAGGCGGTTCTGCTTTGAGGTGGTGTCCACC
AGCAAGTCCTGCCTCCTCCAGGCTGACTCAGAGCGCCTCCTGCAGCTGTGGGTCAGTGCTGTGCAGAGCA
GCATTGCTTCTGCCTTCAGTCAGGCTCGCCTTGATGACAGCCCCCGGGGTCCAGGCCAGGGCTCAGGACA
CCTGGCCATAGGCTCTGCTGCCACCCTGGGCTCTGGTGGAATGGCCAGGGGAAGGGAGCCTGGGGGAGTC
GGGCACGTGGTGGCCCAGGTCCAGAGTGTGGATGGCAATGCCCAGTGCTGCGACTGCCGGGAGCCAGCCC
CGGAGTGGGCCAGCATCAACCTTGGTGTCACCCTCTGCATTCAGTGTTCCGGCATCCACAGGAGCCTTGG
TGTTCACTTCTCCAAAGTCCGGTCTCTGACCCTTGACTCATGGGAGCCAGAACTAGTGAAGCTCATGTGT
GAGCTGGGAAATGTCATCATCAACCAGATCTATGAGGCCCGCGTGGAGGCCATGGCAGTGAAGAAACCAG
GGCCCAGCTGCTCCCGGCAGGAGAAGGAGGCCTGGATTCACGCTAAATACGTGGAGAAGAAGTTCCTGAC
CAAGCTGCCTGAGATTCGAGGGCGAAGAGGTGGCCGGGGGCGCCCAAGGGGGCAGCCTCCTGTGCCCCCA
AAGCCTTCCATCAGGCCCCGGCCAGGGAGCTTGAGATCCAAGCCAGAGCCCCCCTCTGAGGACCTGGGAA
GCCTGCACCCTGGGGCCCTACTGTTTCGAGCGTCTGGGCATCCTCCATCTCTTCCCACCATGGCTGATGC
CCTTGCCCATGGAGCTGATGTCAACTGGGTCAATGGGGGCCAAGATAATGCCACACCGCTGATCCAGGCC
ACAGCTGCTAATTCTCTTCTGGCCTGTGAGTTTCTCCTCCAGAACGGGGCGAACGTGAACCAAGCGGACA
GTGCGGGCCGGGGCCCGCTGCACCACGCAACCATTCTTGGCCACACGGGGCTCGCCTGCCTGTTCCTGAA
ACGGGGAGCTGATCTGGGGGCTCGAGACTCTGAAGGCAGGGACCCTCTGACCATCGCCATGGAAACAGCC
AACGCTGACATCGTCACCCTGCTACGACTGGCAAAGATGAGGGAGGCTGAAGCGGCCCAGGGGCAGGCAG
GAGATGAGACGTATCTTGACATCTTCCGCGACTTCTCCCTCATGGCGTCAGACGACCCGGAGAAGCTGAG
CCGTCGCAGTCATGACCTCCACACGCTGTGACCCGAGGCCCACGGGGCCCGCGCCTGCCTCCCTTCCCCG
CCACCGGGCCCTCTGCCATTAAAGCCTCCGTGCTTCGCTCTTCC

Human CENTB1 mRNA sequence - var2 (public gi: 17391288) (SEQ ID NO: 38)
GAGCTCCTCCTAGGACACCCCTTTCCCCTTGGGGAAAGGATTGTGCCCCCAGGCCCTTCCCCGCGGAGGT
CCCTCTCCTCCTTCCCCCTCATCTCCCCTTCCTGGGACAGAAAGTGCCTCCACCTGCATCCCCAGGGGCC
CGGCCTCCAGGGCCCGCTGGCCCCACAGCAGGCAAGCTGAGATGACGGTCAAGCTGGATTTCGAGGAGTG
TCTCAAGGACTCACCCCGTTTCCGAGCCTCTATTGAGCTGGTGGAAGCCGAAGTGTCAGAATTGGAGACC
CGTCTGGAAAAGCTCCTGAAACTGGGCACTGGTCTCCTGGAAAGTGGGCGCCATTACCTTGCTGCCAGCC
GCGCCTTCGTTGTCGGCATTTGTGACCTGGCCCGCCTGGGTCCACCAGAGCCCATGATGGCGGAGTGTCT
GGAAAAATTCACCGTGAGCCTGAACCACAAGCTGGACAGCCATGCGGAGCTTCTAGATGCCACCCAACAC
ACACTGCAGCAGCAGATCCAGACCCTGGTCAAGGAAGGTCTGCGGGGTTTCCGAGAGGCTCGCCGGGATT
TCTGGCGGGGGGCTGAGAGCCTGGAGGCTGCCCTGACCCACAACGCAGAGGTTCCCAGGCGCCGGGCCCA
GGAGGCAGAAGAGGCAGGAGCTGCTTTGAGGACGGCTCGAGCTGGGTACCGGGGACGGGCACTGGATTAT

Figure 36 part - 19

GCCCTGCAGATCAACGTGATTGAGGACAAGAGGAAGTTTGACATCATGGAGTTTGTGCTGCGTTTGGTGG
AGGCCCAGGCTACCCATTTCCAGCAGGGCCATGAGGAGCTGAGCCGGCTGTCCCAGTATCGAAAGGAGCT
GGGCGCCCAGTTGCACCAGCTGGTCTTGAATTCAGCACGAGAGAAGAGGGACATGGAGCAGAGACACGTG
CTGCTGAAACAGAAGGAGCTGGGTGGGGAGGAGCCAGAACCAAGCTTAAGAGAGGGGCCTGGTGGCCTGG
TGATGGAAGGACATCTCTTCAAACGGGCCAGCAACGCATTTAAGACCTGGAGCAGACGCTGGTTCACCAT
TCAGAGCAACCAACTGGTTTACCAGAAGAAGTACAAGGACCCTGTGACTGTGGTGGTGGATGACCTTCGT
CTCTGCACAGTGAAACTCTGCCCTGACTCAGAAAGGCGGTTCTGCTTTGAGGTGGTGTCCACCAGCAAGT
CCTGCCTCCTCCAGGCTGACTCAGAGCGCCTCCTGCAGCTGTGGGTCAGTGCTGTGCAGAGCAGCATTGC
TTCTGCCTTCAGTCAGGCTCGCCTTGATGACAGCCCCCGGGGTCCAGGCCAGGGCTCAGGACACCTGGCC
ATAGGCTCTGCTGCCACCCTGGGCTCTGGTGGAATGGCCAGGGGAAGGGAGCCTGGGGGAGTCGGGCACG
TGGTGGCCCAGGTCCAGAGTGTGGATGGCAATGCCCAGTGCTGCGACTGCCGGGAGCCAGCCCCGGAGTG
GGCCAGCATCAACCTTGGTGTCACCCTCTGCATTCAGTGTTCCGGCATCCACAGGAGCCTTGGTGTTCAC
TTCTCCAAAGTCCGGTCTCTGACCCTTGACTCATGGGAGCCAGAACTAGTGAAGCTCATGTGTGAGCTGG
GAAATGTCATCATCAACCAGATCTATGAGGCCCGCGTGGAGGCCATGGCAGTGAAGAAACCAGGGCCCAG
CTGCTCCCGGCAGGAGAAGGAGGCCTGGATTCACGCTAAATACGTGGAGAAGAAGTTCCTGACCAAGCTG
CCTGAGATTCGAGGGCGAAGAGGTGGCCGGGGGCGCCCAAGGGGGCAGCCTCCTGTGCCCCCAAAGCCTT
CCATCAGGCCCCGGCCAGGGAGCTTGAGATCCAAGCCAGAGCCCCCCTCTGAGGACCTGGGAAGCCTGCA
CCCTGGGGCCCTACTGTTTCGAGCGTCTGGGCATCCTCCATCTCTTCCCACCATGGCTGATGCCCTTGCC
CATGGAGCTGATGTCAACTGGGTCAATGGGGGCCAAGATAATGCCACACCGCTGATCCAGGCCACAGCTG
CTAATTCTCTTCTGGCCTGTGAGTTTCTCCTCCAGAACGGGGCGAACGTGAACCAAGCGGACAGTGCGGG
CCGGGGCCCGCTGCACCACGCAACCATTCTTGGCCACACGGGGCTCGCCTGCCTGTTCCTGAAACGGGGA
GCTGATCTGGGGGCTCGAGACTCTGAAGGCAGGGACCCTCTGACCATCGCCATGGAAACAGCCAACGCTG
ACATCGTCACCCTGCTACGACTGGCAAAGATGAGGGAGGCTGAAGCGGCCCAGGGGCAGGCAGGAGATGA
GACGTATCTTGACATCTTCCGCGACTTCTCCCTCATGGCGTCAGACGACCCGGAGAAGCTGAGCCGTCGC
AGTCATGACCTCCACACGCTGTGACCCGAGGCCCACGGGGCCCGCGCCTGCCTCCCTTCCCCGCCACCGG
GCCCTCTGCCATTAAAGCCTCCGTGCTTCGCTCAAAAAAAAAAAAAAA

Human CENTB1 mRNA sequence - var3 (public gi: 34533014) (SEQ ID NO: 39)

ATGTCAGCGTTGGCTGTTTCCATGGCGATGGTCAGAGGGTCCCTGCCTTCAGAGTCTCGAGCCCCCAGAT
CAGCTCCCCGTTTCAGGAACAGGCAGGCGAGCCTGGAGAGAAGAGCCAGGGTCAGCCGGCCGCCCAACTT
CTCCCAGCCTTCCTCCCCATGCCATCATCCCTACCCCGTGTGGCCAAGAATGGTTGCGTGGTGCAGCGGG
CCCCGGCCCGCACTGTCCGCTTGGTTCACGTTCGCCCCGTTCTGGAGGAGAAACTCACAGGCCAGAAGAG
AATTCTGCATGGAGAAGTCGAGAAGGGGGGTTGAGGGTGGCATCCCTAGTGGTGGATTTCAAGATGTCTT
AGGGTGGCGCCAGTTCAGAGAATGGGAGGGTGGAGTGTGGTAATCAGGAGTGTGGAAGGGGTTACAGCTA
ACTGTAACCAAGCTAGGCTTGGCTCTAGCTCTTTGCATGTATTCATATATAAATCCATAGTACAAGCTTT
TGAGGTATGTTACTATTTTACAGATGAGGCTGAGAGGTTAATAACTTGTTAAAAGTCTCCTGTAGGCCGG
GCACAGTGGCTCACGCCAGTAATCCCAGCACTTTGGGAGGCCGAGGCGGGTGGATCACAGGGTCAGGAGA
TCCAGACCATCCTGGCTAGCACGGTGGAGCCCTATCTCTACTAACAATACAAGAAATTAGCCGGGCATGC
TGGCTGGCGCCTGTGGTCCCAGCTACTCGGGCAGCTGAGGCAGGAGAATGGTGTGAACCCGGGAGGCGGA
GCTTGCAGTGAGCCGAGATCGCACCATTGCACTCCGGCCTGGGGGACGGAGCGAGACTGTCTCAAAAAAA
AAAAAAAAGTCTCCTGTAAGAGGTGAGAGCCTGGGTTCAAACTCAGGTTCTCTGCCTCCAAATCACACAC
TCTTAGCAACCAGTCTCTATTGTTGATCTCTCCCTATGGGTGGAAGCCCTAGGGAACAGGTGGTGGGGAA
AGGAGGTAAGGGCAGGGCCCAGAGTCAGGAGTAGGTGTCAGAGCCCTAGGGTGGGGTGGAGAGGTCAGCA
GGGCTCTTACAGCAGCTGTGGCCTGGATCAGCGGTGTGGCATTATCTTGGCCCCCATTGACCCAGTTGAC
ATCAGCTCCATGGGCAAGGGCATCAGCCATGGTGGGAAGAGATGGAGGATGCCCAGACGCTCGAAACAGT
AGGGCCCCAGGGTGCAGGCTTCCCAGGTCCTCAGAGGGGGGCTCTGTTCGGGGGATTTGGTTCTGTTAGG
GGGAAGCAGCTCCGAGTCTGGGAAGAAAACCCTCAGCAGTGTCCCAATGCTATAATGGGACAGGTCTCTT
CTAAATGATGGGGAGCTTGGGACTGTGGAGGGAATAGAGTGATGCAAGTGTGGGTATGTGTAAGTATGCG
TATGCATGTGTACGAGTCCCTAGGGTGTGGGGGAGAGACGGCATCATCACCTCATCTGGTCCAACCACAC
TTGGCCTCAGCTCTCAACCCCTGACGCTCCAGCCAAACCCACCCCCTCTCTCTCTCCTTTTCTTGTGCTG
TTGGCACCCCTTACCCTCCCTGCCCACGCCCAGCCCCACATTCCTTCTCATTCTTAATGTCACACTCCAC
CGTAACCCCTGAAACGGCAGTCCGGTCCCTCCGACATTGTCCAGCGGAAGGCCTGGGCTTCACACTCTGT
GCCTCCCGGCGCTACCTGGCACGATGCCGAGCACACAGCAGATGCTCAATGAATGCCCGACCAACCCTAT
ACCTGGCTTGGATCTCAAGCTCCCTGGCCGGGGCCTGATGGAAGGCTTTGGGGGCACAGGAGGCTGCCCC
CTTGGGCGCCCCCGGCCACCTCTTCGCCCTCGAATCTCAGGCAGCTTGGTCAGGAACTTCTTCTCCACGT
ATTTAGCGTGAATCCAGGCCTCCTTCTCCTGCCTGTGGGAGGGGAGAAGCACGCAGTCTTCCCTCTTCTG
CTCCAGGGGTCCCCCATTCCCCTGGGAGGCTAAACCCCAAGCTCACCGGGAGCAGCTGGGCCCTGGTTTC
TTCACTGCCATGGCCTCCACGCGGGCCTCATAGATCTGGTTGATGATGACATTTCCCAGCTCACACATGA
GCTTCAGGAGGCCCAGGCAGAGGCAGAGACAGGGAAGGTGGGGGTGAGTGACTCCTCAGGGATCACGCCC
CTGCACCGCCATGTCCTTGCCCCACCCCAAGTTCTTGCCCCCAATCTTCACAATACGCTAAGTTACCTTC
ACTAGTTCTGGCTCCCATGAGTCAAGGGTCAGAGACCGGACTTTGGAGAAGTGAACACCAAGGCTCCTGG
AGGGCCAGAGGGGGAGGGTCAGGCCCTGTGCAGGGGGGCAGTGGCCTGGGGAGCTGCTGCTGCTCCTGAA
GACACTGGGAGGCAAGGCTGGCATGGGGGCCCGTGCAGAGGTGCTGGCCCAGGAGGCAGGGCAGCTGCGG

Figure 36 part - 20

CCATGTAACCGCCATGTAGCCTTGACCTGGCCCTGGCAGGACTCTGCCTCGTCACCATTCCTTCTTCCTT
AGGTTTCATTTCAAGGCCCTCATCACTCCAGCCACCTCCCTTCTCTAGTGACACTTGTGACACTTTGGCC
TGGACAACCTCTCCCATGTCACCTCCCTTCCACCACACTGAGGTGGGGGGCGAGGGCCTTAGATACTTGC
TAAGGCCTCATGACCGTTTCTCTGCCTAGTCTTCACTGGCTCCCCCACCCTCAGCAGCCTTGACCCCACA
CTTCTTCCAACCAAGCCAACAAATTCTGGGTATCCCCCAATTCTGGCCAGACTAGGACACAGAGGGGCTA
GGCCCGCCTGGGTCCAACTGGCACCCCAGAGGCTTGGGCCCAGGCCTGGTACCCAGTGACAAAGCCAGAA
GCTAAGAGAGGAAGCCAGGACAGGGAAGGAAGAGGGGCCGGTGTGATGCGCTCTGTATTGGAGCCGCACT
GTGGCCCGAAGGAGTGGGGCTCCCGCATGGGCCTTGTGGAGTAACCTGTGGATGCCGGAACACTGAATGC
AGAGGGTGACACCAAGGTTGATGCTGGCCCACTCCGGGGCTGGCTCCCGGCAGTCGCAGCACTGGGCATT
GCCATCCACACTCTGGACCTGGGCCACCACGTGCCCGACTCCCCCAGGCTCCCTTCCCCTGGCCATTCCA
CCAGAGCCCAGGGTGGCAGCAGAGCCTATGGCCAGGTGTCCTGAGCCCTGGGGGGAGAGAGGGGAAGAAAG
GGTGGCCAAGGGGCCTAGGGTAAAGGGTGCCCCATCTCCACAGGCAGCCTGGCTCCGCACCCCCAGGTTA
AGGTACCTGGCCTGGACCCCGGGGGCTGTCATCAAGGCGAGCCTGACTGAAGGCAGAAGCAATGCTGCTC
TGCACAGCACTGACCCACAGCTGCAGGAGGCGCTCTGAGTCAGCCTGGAGGAGGCAGGACCTAGGTAGGA
GGGTGAGGGAGATGGCAGAGGGGTCTGAGGCCTGGGAAGCAAAGTGGCAGCATGGGCAGACTGACATTCA
GCCAGTATTCAACCAGTTCCAGTTGCATTGAAAGACTTCTGTACCAGTTGGTAATATTCTCCTAAATATC
CCCCATCACCCTGTACCCTCTTCCACAATGGCCCCCCAGTCCAGCCGCCAAAGAATTAAATTAAAGTCTG
GAGCTGCATGGGGGGCTTCCATTGTGGTGGGCCCTGCCTTTCAGATTGGCAGTTGTTTAGATATATTAGA
GTATCACCCCTGGGGATTGCACTCACTTGCTGGTGGACACCACCTCAAAGCAGAACCGCCTTTCTGAGTC
AGGGCAGAGTTTCACTGTGCAGAGACGAAGGTCATCCACCACCACAGTCACAGGGTCCTGGCAGGATAAG
GTGATAAGGGGCCAGATGTCCAGCTGCAGGCAAGAGCTGAGTCTCCCTGGGGCCCAGGCATCCAGGACCC
AGGTCCACTCACCTTGTACTTCTTCTGGTAAACCAGTTGGTTGCTCTGAATGGTGAACCAGCGTCTGTAA
GAGAAGGAAATCATTACAGACATAGGCAGCTTTAGGATGAGGGACGGAAGAGAGGCTGTGCTTTTTGCCC
ATGAGGATCTTACTGAGAGGACAGACACCTGGGCTGACTGTTCCACGAGACATTCCAGAGAAGGGTGGAC
AATTGTGCAGATTGGAACATCTAAAGGATGCTATTCCTATCTTGGACAACCCAGATTTCATATAGTTATG
AAGACAACTTTCCAGCAGATGGCAGTAAAATTCTTTTTCTAATAAAATGTCTATTGCTACAATTTAAAAA
ATACTATTTAGGCTGGGCTCACACCTGTAATCCCAGCACTTTGGGAGGCTGATGGGGGTGGTGGATCGCC
CGAGGTCAGGAGTTTGAGACCACCCTGACCAATATGGTGAAACTCCGTCTCTACTAAAAATACAAAAATT
AGCCAGGCGTGGTGGCAGGCGGCTATAATCCCACCTACTTGGGAGGCTGAGGCGGGAGAATCGCTTGAAC
CCAGGAAGCTGAGGTTGCAGTGAGCTGGGATCGCACCACTGTGCTGCAGCCTGCGCAACATAGCGAGGCT
CCATCAAAAAAGAAAAAAAAAAGAAAAAGAAAAAAAGAAAAGAAAGAATCTTGGGGGCCAGGTACAGTGG
CTCACGCCTGTAGTCCCAGCAAGTTGGGAGGCCGAGGCGGGTGGATTGCTTGATGTCAGGAGTTTGCAAC
CAGCCTGGGCAACATGGTGAAACCCTGTTTCTACCAAAAATACAAAAATTAGCCGAGCGTGATGGCACGC
GCCTGTGGTCCCAGCTGTTTAGGATGCTGAGGAGGGAGGATCACTTGAACTCAGGGGATAGAGGTTGCAG
TGAGCCGAGACTGCGCCACTGCACTGCAGGCTGGGCAACAGAGTGACACCCCATCTCAAAAAAAAACAG

Human CENTB1 mRNA sequence - var4 (public gi: 32879918) (SEQ ID NO: 40)

ATGACGGTCAAGCTGGATTTCGAGGAGTGTCTCAAGGACTCACCCCGTTTCCGAGCCTCTATTGAGCTGG
TGGAAGCCGAAGTGTCAGAATTGGAGACCCGTCTGGAAAAGCTCCTGAAACTGGGCACTGGTCTCCTGGA
AAGTGGGCGCCATTACCTTGCTGCCAGCCGCGCCTTCGTTGTCGGCATTTGTGACCTGGCCCGCCTGGGT
CCACCAGAGCCCATGATGGCGGAGTGTCTGGAAAAATTCACCGTGAGCCTGAACCACAAGCTGGACAGCC
ATGCGGAGCTTCTAGATGCCACCCAACACACACTGCAGCAGCAGATCCAGACCCTGGTCAAGGAAGGTCT
GCGGGGTTTCCGAGAGGCTCGCCGGGATTTCTGGCGGGGGGCTGAGAGCCTGGAGGCTGCCCTGACCCAC
AACGCAGAGGTTCCCAGGCGCCGGGCCCAGGAGGCAGAAGAGGCAGGAGCTGCTTTGAGGACGGCTCGAG
CTGGGTACCGGGGACGGGCACTGGATTATGCCCTGCAGATCAACGTGATTGAGGACAAGAGGAAGTTTGA
CATCATGGAGTTTGTGCTGCGTTTGGTGGAGGCCCAGGCTACCCATTTCCAGCAGGGCCATGAGGAGCTG
AGCCGGCTGTCCCAGTATCGAAAGGAGCTGGGCGCCCAGTTGCACCAGCTGGTCTTGAATTCAGCACGAG
AGAAGAGGGACATGGAGCAGAGACACGTGCTGCTGAAACAGAAGGAGCTGGGTGGGGAGGAGCCAGAACC
AAGCTTAAGAGAGGGGCCTGGTGGCCTGGTGATGGAAGGACATCTCTTCAAACGGGCCAGCAACGCATTT
AAGACCTGGAGCAGACGCTGGTTCACCATTCAGAGCAACCAACTGGTTTACCAGAAGAAGTACAAGGACC
CTGTGACTGTGGTGGTGGATGACCTTCGTCTCTGCACAGTGAAACTCTGCCCTGACTCAGAAAGGCGGTT
CTGCTTTGAGGTGGTGTCCACCAGCAAGTCCTGCCTCCTCCAGGCTGACTCAGAGCGCCTCCTGCAGCTG
TGGGTCAGTGCTGTGCAGAGCAGCATTGCTTCTGCCTTCAGTCAGGCTCGCCTTGATGACAGCCCCCGGG
GTCCAGGCCAGGGCTCAGGACACCTGGCCATAGGCTCTGCTGCCACCCTGGGCTCTGGTGGAATGGCCAG
GGGAAGGGAGCCTGGGGGAGTCGGGCACGTGGTGGCCCAGGTCCAGAGTGTGGATGGCAATGCCCAGTGC
TGCGACTGCCGGGAGCCAGCCCCGGAGTGGGCCAGCATCAACCTTGGTGTCACCCTCTGCATTCAGTGTT
CCGGCATCCACAGGAGCCTTGGTGTTCACTTCTCCAAAGTCCGGTCTCTGACCCTTGACTCATGGGAGCC
AGAACTAGTGAAGCTCATGTGTGAGCTGGGAAATGTCATCATCAACCAGATCTATGAGGCCCGCGTGGAG
GCCATGGCAGTGAAGAAACCAGGGCCCAGCTGCTCCCGGCAGGAGAAGGAGGCCTGGATTCACGCTAAAT
ACGTGGAGAAGAAGTTCCTGACCAAGCTGCCTGAGATTCGAGGGCGAAGAGGTGGCCGGGGGCGCCCAAG
GGGGCAGCCTCCTGTGCCCCCAAAGCCTTCCATCAGGCCCCGGCCAGGGAGCTTGAGATCCAAGCCAGAG
CCCCCCTCTGAGGACCTGGGAAGCCTGCACCCTGGGGCCCTACTGTTTCGAGCGTCTGGGCATCCTCCAT
CTCTTCCCACCATGGCTGATGCCCTTGCCCATGGAGCTGATGTCAACTGGGTCAATGGGGGCCAAGATAA

Figure 36 part - 21

TGCCACACCGCTGATCCAGGCCACAGCTGCTAATTCTCTTCTGGCCTGTGAGTTTCTCCTCCAGAACGGG
GCGAACGTGAACCAAGCGGACAGTGCGGGCCGGGGCCCGCTGCACCACGCAACCATTCTTGGCCACACGG
GGCTCGCCTGCCTGTTCCTGAAACGGGGAGCTGATCTGGGGGCTCGAGACTCTGAAGGCAGGGACCCTCT
GACCATCGCCATGGAAACAGCCAACGCTGACATCGTCACCCTGCTACGACTGGCAAAGATGAGGGAGGCT
GAAGCGGCCCAGGGGCAGGCAGGAGATGAGACGTATCTTGACATCTTCCGCGACTTCTCCCTCATGGCGT
CAGACGACCCGGAGAAGCTGAGCCGTCGCAGTCATGACCTCCACACGCTGTAG

Human CENTB1 protein sequence - var1 (public gi: 32879919) (SEQ ID NO: 231)
MTVKLDFEECLKDSPRFRASIELVEAEVSELETRLEKLLKLGTGLLESGRHYLAASRAFVVGICDLARLG
PPEPMMAECLEKFTVSLNHKLDSHAELLDATQHTLQQQIQTLVKEGLRGFREARRDFWRGAESLEAALTH
NAEVPRRRAQEAEEAGAALRTARAGYRGRALDYALQINVIEDKRKFDIMEFVLRLVEAQATHFQQGHEEL
SRLSQYRKELGAQLHQLVLNSAREKRDMEQRHVLLKQKELGGEEPEPSLREGPGGLVMEGHLFKRASNAF
KTWSRRWFTIQSNQLVYQKKYKDPVTVVVDDLRLCTVKLCPDSERRFCFEVVSTSKSCLLQADSERLLQL
WVSAVQSSIASAFSQARLDDSPRGPGQGSGHLAIGSAATLGSGGMARGREPGGVGHVVAQVQSVDGNAQC
CDCREPAPEWASINLGVTLCIQCSGIHRSLGVHFSKVRSLTLDSWEPELVKLMCELGNVIINQIYEARVE
AMAVKKPGPSCSRQEKEAWIHAKYVEKKFLTKLPEIRGRRGGRGRPRGQPPVPPKPSIRPRPGSLRSKPE
PPSEDLGSLHPGALLFRASGHPPSLPTMADALAHGADVNWVNGGQDNATPLIQATAANSLLACEFLLQNG
ANVNQADSAGRGPLHHATILGHTGLACLFLKRGADLGARDSEGRDPLTIAMETANADIVTLLRLAKMREA
EAAQGQAGDETYLDIFRDFSLMASDDPEKLSRRSHDLHTL

Human CENTB1 protein sequence - var2 (public gi: 34533015) (SEQ ID NO: 232)
MSALAVSMAMVRGSLPSESRAPRSAPRFRNRQASLERRARVSRPPNFSQPSSPCHHPYPVWPRMVAWCSG
PRPALSAWFTFAPFWRRNSQARREFCMEKSRRGVEGGIPSGGFQDVLGWRQFREWEGGVW

Human CENTB1 pray sequence - var1 (SEQ ID NO: 41)
GCCTGGAGTACCCATACGACGTACCAGATTACGCTCATATGGCCATGGAGGCCAGTGAATTCCACCCAAG
CAGTGGTATCAACGCAGAGTGGCCATTATGGCCGGGGAAGGAGGCCTGGATTCACGCTAAATACGTGGAG
AAGAAGTTCCTGACCAAGCTGCCTGAGATTCGAGGGCGAAGAGGTGGCCGGGGGCGCCCAAGGGGGCAGC
CTCCTGTGCCCCCAAAGCCTTCCATCAGGCCCCGGCCAGGGAGCTTGAGATCCAAGCCAGAGCCCCCCTC
TGAGGACCTGGGAAGCCTGCACCCTGGGGCCCTACTGTTTCGAGCGTCTGGGCATCCTCCATCTCTTCCC
ACCATGTCGGCCGCCTCGGCCTCTAGAGGGTGGGCATCGATACGGGATCCATCGAGCTCGAGCTGCAGAT
GAATCGTAGATACTGAAAAACCCCGCAAGTTCACTTCAACTGTGCATTCGTGC

Human CENTB1 pray sequence - var2 (SEQ ID NO: 42)
CCGGCATGAGTACCATAACGACGTACAGATTACAGCGTNCATATAGTGACCATGGAGGCAGTGAATTCCA
CCGCAAGCAGTGGTATCAACGTCATGAGATGGACCATTATGAGCCGGGGTGGGCAGCCTCCTGATGTCCC
CGCGAAAGGCCTTCCATCAGGCNCCGGCAGAGGCAGCTTGAGATCCAAGCCAAGAGCCCCCCTCTGAGGA
CCTGGGTAAGACCTGCTACCACTAGTGCGGCCCTACTGTTNCGAGCGTCTGGGCATACTCCATCTCTTCC
CAACCGATGGNCTGATGCCCTTTGGCGCCATGGTAGCTTGATGTCAACCTAGGTGTACAANTGTGAGTGG
CCTNAAGGATAAATTGCTCGTCGACCAGACCGGCTATCCAAAGGCACAATAATCTAGCTAATTCGTTACG
TTCTTGG

Human CENTB1 pray sequence - var3 (SEQ ID NO: 43)
CCTGGAGTACCCATACGACGTACCAGATTACGCTCATATGGCCATGGAGGCCAGTGAATTCCACCCAAGC
AGTGGTATCAACGCAGAGTGGCCATTATGGCCGGGGGGGCAGCCTCCTGTGCCCCCAAAGCCTTCCATCA
GGCCCCGGCCAGGGAGCTTGAGATCCAAGCCAGAGCCCCCCTCTGAGGACCTGGGAAGCCTGCACCCTGG
GGCCCTACTGTTTCGAGCGTCTGGGCATCCTCCATCTCTTCCCACCATGGCTGATGCCCTTGCCCATGGA
GCTGATGTCAACTGGGTCAATGGGGGCCAAGATAATGCCACACCGCCGATCCAGGCCACAGCTGCTAATT
CTCTTCTGGCCTGTGAGTTTNNGCTCCAGAACGGGGCGAACGTGAACCAAGCGGACAGTGCGGGCCGGGG
CCCGCTGCACCACGCAACCATTCTTGGCCACACGGGGCTCGCCTGCCTGTTCCTGAAACGGGGAGCGGAT
CTGGGGGCTCGAGACTCTGAAGGCAGGGACCCTCTGACCATCGCCATGGAAACAGCCAACGCTGACATCG
TCACCCTGCTACGACTGGCAAAGATGAGGGAGGCTGAAGCGGCCCAGGGGCAGGCAGGAGATGAGACGTA
TCTTGACATCTTCCGCGACTTCTCCCTCATGGCGTCAGACNACCCNGAGAAGCTGANCCGTCGCAGTCAT
GACCTCCACACGCTGTGACCCGAGGCCCACGGGGCCCGCGCCTGCCTTCNTTTCCCGNCACCGGGCCCTT
TGNCATNAAAGCCTNCGNGCTTCNAAAAAAAAAAAAAAAAAAAA

Human CENTB1 pray sequence - var4 (SEQ ID NO: 44)
CCGGCCATGGAGTACCATACGACGTACAGTATTACAGCTACATATGGCCATGGAGGCCAGTGAATTCCAC
CGCAATGCAGTGGTATCAACGCATGCAGATGGACCATTATGGCCGGGGTGGGCACGTCCGTCCATGATGT
CCCCCAAAGGCCTTCCATCAGGCCCCGTGGCAGAGGAGGCTTGAGATCCAAGCCAGAGCCCACCCTCTGA
GGACCTGGGAAGCCTGCACCCNGGCGGCCCTACTGTTTCGAGCGTCTGGGACATACTCCATCATCTTCCC

Figure 36 part - 22

ACGCGATGGACTGATGCCCTTGGGCCAATGGACGCTGATGTCAACTGGTGTACAGAGTGTGAGTGGCCAA
GATTAACTGCTCATCACCCGATGATCCATGGCCACTAGTCTGCTAAATATCTCTTCTGGCCTGTGAGTTT
CTCCTCACAGAAACGGTGCGCTGCAATCGTGAACNCAAAGCGGATCGAGTTGCAGGGCCTGGGGCCCGNG
TTGCACCGATCGCAAGCCAATTCTTGGCCANCTATCTGCGGGCTCGCCTGCCTGTTCCTGANACGAGGGA
GCTGATCTGGGGCGCTCGACGACTCTGAAG

Human CENTB1 pray sequence - var5 (SEQ ID NO: 45)
GCCATGGATACCATACGACGTACAGATTACGCTCATATGGCCATGGAGGCAGTGAATTCCACCCAAGCAG
TGGTATCAACGCATGAGATGGTCATTATGGCCGGGGCAGGAGAAGGAGGCCTGGATTCACGCTAAATACG
TGGAGAAGAAGTTCCTGACCAAGCTGCCGTGAGAATTCGAGGGCGAAGAGGTGGCCGNGGGCGCCCAAGG
GGGCAGCCTCCTGTGCCAGCCCTAAAGCCTTCCATCATGGCCCCGCGTCCAAGGAGCTTGAGATCCAATG
CCGAGTAGCCCCCCTCTGACGGACCTAGGGAAGCCTGCTACCCTGAGGTGCCCTACGTGTTTCGAGCGTC
TGGGCATCCTCCATCTCTTTCCACCATGGCCTGATGCCCTTGCCCATGGAGCTGATGTCAACTGGGTCAA
TGGGTGGCCAAGATATATGCCACACCGCTGATCCAGTGCCACAGCTGCTACTTCTCTTCTGGCCTGTTGA
NTNTTCTCCTCCAGAACGGTGGCGACACGTGAACCCAAGCGGNCAGTGCCGGC

Human CENTB1 pray sequence - var6 (SEQ ID NO: 46)
GGCCATGGAGTACCATACGACGTACAGATTACGCTCATATGGCCATGGAGGCCAGTGAATTCCACCGCAA
GCAGTGGTATCAACGCATGAGATGGACCATTATGGGGGGCAGTGCCATGGGCAGCTGAAGAAATCCANGC
CCAGCTGCTCCCGGCAGGAGAAGGAGGCCTGGATTCACGGCATAATAGTAGCAGCTGGAGTAAGAAGTTC
CTGTATCCAAGTCTGCCCTGACGAATTCGAGGTGGCGAAGTATGGTGGCCGGGGGCAGTCCTCGAAGGAG
GGTCAGCCACTCCTGGTGCCGCCACGAACATGCCCGTTTCCATACACGCGTCCCCGGCCCACGGGATGGC
ATTGAGATCCACATGCACAGAGCCCCGCCTCTGAGGACCTGTGAGCAAGCTCATGGCAACCCTGGGGACC
CTAGCGTAGTATTCTGAGCCAGTCTGGGCAATCGCTTCACATCTCTTCTCCACGCATGAGCATGATGCGC
GCTTTGACCCATGGAGCTAGATGTCAACTGGGTCAATGGGGTGCCAAGATAATCGCCACACCGTCTGATC
CAAGGCCTACAGCTGCTAACGTTCCTCTTCTGGCCTGTGAGTTTCTCCTCTCAGAACGGGGCGAACTGTG
AAGCCCAAGCGTGACAGTGCGGGCCCGGGGCCCGACTGCGCCACGCAATCCACTTCTTGGCCNGCAACNT
GGGCTCGNCTTGCCTTGTTTCCTTGATCAC

Human CENTB1 pray sequence - var7 (SEQ ID NO: 47)
CNCGGCATGGAGTACCATACGACGTACAGATTACGCTCATATGGCCATGGAGGCAGTGAATTCCACCCAA
GCAGTGGTATCAACGCATGAGTGGACCATTATGGGGGAAGCTCATGTGTGAGCATGGGAAATAGTCATCA
TCAACCAAGATCTATGAGGCCCGCGTGGAGGCCATGGCAGTGAAGAAACCAGGGCCCAGTCTGCTCCCGG
CAGGAGAAGGAGGCCTGGATTCACGCTAAATACGTGGAAGAAGAAGTTCCTGACCAAGCTGCCTGAGATT
CGATGGCGANGAGGTGGCCGGGGGCGCCCAANGGGGCAGNCTCCTGTGCCCCCAAAGCCTTCCATCAGGC
CCCAGGCGCAGGGAGCTTGAGATCCAATGCCAGAGCCCCCCGTCTGAGGACCTGGGAAGCCTGCACCCTG
GGGCCCTACTGTTTCGAGCGTCTGGGCATCCTCCATCTCTTCCCACCATGGCTGATGCCCTTGCCCATGG
AGCTGATGTCAACTGGGTCAATGNGGCGGCCAAGATAATGCCATCACCGACTGATCCAGGCCACAGCCTG
CTAANTTCTACTTCTGGCCGTGTGAGTTTCTCCTCCAGGAACGGGGCGAACCGTGGACCAAGGCGGACNN
GTGCGGGCCGGGGCCCGCTGCCACCACGCCAACCATTCTTGGCATACGGGGCTCGCCT

Unigene Name: DDEF1 Unigene ID: Hs.386779

Human DDEF1 mRNA sequence - var1 (public gi: 31873727) (SEQ ID NO: 48)
GAGACAAAGTTTACAAAAATTGAGAAAGAGAAAAGAGAGCACGCAAAACAACATGGGATGATCCGCACAG
AGATAACAGGAGCTGAGATTGCGGAAGAAATGGAGAAGGAAAGGCGCCTCTTTCAGCTCCAAATGTGTGA
ATATCTCATTAAAGTTAATGAAATCAAGACCAAAAAGGGTGTGGATCTGCTGCAGAATCTTATAAAGTAT
TACCATGCACAGTGCAATTTCTTTCAAGATGGCTTGAAAACAGCTGATAAGTTGAAACAGTACATTGAAA
AACTGGCTGCTGATTTATATAATATAAAACAGACCCAGGATGAAGAAAAGAAACAGCTAACTGCACTCCG
AGACTTAATAAAATCCTCTCTTCAACTGGATCAGAAAGAAGATTCTCAGAGCCGGCAGGGAGGATACAGC
ATGCATCAGCTCCAGGGCAATAAGGAATATGGCAGTGAAAAGAAGGGGTACCTGCTAAAGAAAAGTGACG
GGATCCGGAAAGTATGGCAGAGGAGGAAGTGTTCAGTCAAGAATGGGATTCTGACCATCTCACATGCCAC
ATCTAACAGGCAACCAGCCAAGTTGAACCTTCTCACCTGCCAAGTAAAACCTAATGCCGAAGACAAAAAA
TCTTTTGACCTGATATCACATAATAGAACATATCACTTTCAGGCAGAAGATGAGCAGGATTATGTAGCAT
GGATATCAGTATTGACAAATAGCAAAGAAGAGGCCCTAACCATGGCCTTCCGTGGAGAGCAGAGTGCGGG
AGAGAACAGCCTGGAAGACCTGACAAAAGCCATTATTGAGGATGTCCAGCGGCTCCCAGGGAATGACATT
TGCTGCGATTGTGGCTCATCAGAACCCACCTGGCTTTCAACCAACTTGGGTATTTTGACCTGTATAGAAT
GTTCTGGCATCCATAGGGAAATGGGGGTTCATATCTCTCGCATTCAGTCTTTGGAACTAGACAAATTAGG
AACTTCTGAACTCTTGCTGGCCAAGAATGTAGGAAACAATAGTTTTAATGATATTATGGAAGCAAATTTA
CCCAGCCCCTCACCAAAACCCACCCCTTCAAGTGATATGACTGTACGAAAAGAATATATCACTGCAAAGT
ATGTAGATCATAGGTTTTCAAGGAAGACCTGTTCAACTTCATCAGCTAAACTAAATGAATTGCTTGAGGC

Figure 36 part - 23

CATCAAATCCAGGGATTTACTTGCACTAATTCAAGTCTATGCAGAAGGGGTAGAGCTAATGGAGCCACTG
CTGGAACCTGGGCAGGAGCTTGGGGAGACAGCCCTTCACCTTGCCGTCCGAACTGCAGATCAGACATCTC
TCCATTTGGTTGACTTCCTTGTACAAAACTGTGGGAACCTGGATAAGCAGACGGCCCTGGGAAACACAGT
TCTACACTACTGTAGTATGTACAGTAAACCTGAGTGTTTGAAGCTTTTGCTCAGGAGCAAGCCCACTGTG
GATATAGTTAACCAGGCTGGAGAAACTGCCCTAGACATAGCAAAGAGACTAAAAGCTACCCAGTGTGAAG
ATCTGCTTTCCCAGGCTAAATCTGGAAAGTTCAATCCACACGTCCACGTAGAATATGAGTGGAATCTTCG
ACAGGAGGAGATAGATGAGAGCGATGATGATCTGGATGACAAACCAAGCCCTATCAAGAAAGAGCGCTCA
CCCAGACCTCAGAGCTTCTGCCACTCCTCCAGCATCTCCCCCCAGGACAAGCTGGCACTGCCAGGATTCA
GCACTCCAAGGGACAAACAGCGGCTCTCCTATGGAGCCTTCACCAACCAGATCTTCGTTTCCACAAGCAC
AGACTCGCCCACATCACCAACCACGGAGGCTCCCCCTCTGCCTCCTAGGAACGCCGGGAAAGGTCCAACT
GGCCCACCTTCAACACTCCCTCTAAGCACCCAGACCTCTAGTGGCAGCTCCACCCTATCCAAGAAGAGGC
CTCCTCCCCCACCACCCGGACACAAGAGAACCCTATCCGACCCTCCCAGCCCACTACCTCATGGGCCCCC
AAACAAAGGCGCAGTTCCTTGGGGTAACGATGGGGGTCCATCCTCTTCAAGTAAGACTACAAACAAGTTT
GAGGGACTATCCCAGCAGTCGAGCACCAGTTCTGCAAAGACTGCCCTTGGCCCAAGAGTTCTTCCTAAAC
TACCTCAGAAAGTGGCACTAAGGAAAACAGATCATCTCTCCCTAGACAAAGCCACCATCCCGCCCGAAAT
CTTTCAGAAATCATCACAGTTGGCAGAGTTGCCACAAAAGCCACCACCTGGAGACCTGCCCCCAAAGCCC
ACAGAACTGGCCCCCAAGCCCCAAATTGGAGATTTGCCGCCTAAGCCAGGAGAACTGCCCCCCAAACCAC
AGCTGGGGGACCTGCCACCCAAACCCCAACTCTCAGACTTGCCTCCCAAACCACAGATGAAGGACCTGCC
CCCCAAACCACAGCTGGGAGACCTGCTAGCAAAATCCCAGACTGGAGATGTCTCACCCAAGGCTCAGCAA
CCCTCTGAGGTCACACTGAAGTCACACCCATTGGATCTATCCCCAAATGTGCAGTCCAGAGACGCCATCC
AAAAGCAAGCATCTGAAGACTCCAACGACCTCACGCCTACTCTGCCAGAGACGCCCGTACCACTGCCCAG
AAAAATCAATACGGGGAAAAATAAAGTGAGGCGAGTGAAGACCATTTATGACTGCCAGGCAGACAACGAT
GACGAGCTCACATTCATCGAGGGAGAAGTGATTATCGTCACAGGGGAAGAGGACCAGGAGTGGTGGATTG
GCCACATCGAAGGACAGCCTGAAAGGAAGGGGGTCTTTCCAGTGTCCTTTGTTCATATCCTGTCTGACTA
GCAAAACGCAGAACCTTAAGATTGTCCACATCCTTCATGCAAGACTGCTGCCTTCATGTAACCCTGGGCA
CAGTGTGTATATAGCTGCTGTTACAGAGTAAGAAACTCATGGAAGGGCCACCTCAGGAGGGGGATATAAT
GTGTGTTGTAAATATCCTGTGGTTTTCTGCCTTCACCAGTATGAGGGTAGCCTCGGACCCGGCGCGCCTT
ACTGGTTTGCCAAAGCCATCCTTGGCATCTAGCACTTACATCTCTCTATGCTGTTCTACAAGCAAACAAA
CAAAAATAGGAGTATAGGAACTGCTGGCTTTGCAAATAGAAGTGGTCTCCAGCAACCGTTGAAAGGCATA
GAATTGACTCTGTTCCTAACAATGCAGTATTCTCAATTGTGTTACTGAAAATGCAACATTAGCAAAGAGG
TGGGTTCTGTTTTCCAGGTGAAACTTTTAGCTCCATGACAGACCAGCCTGTAGTTATCTGTGTACACAGT
TTACAGCTACAAAAACCTACTTTGGTATTTATTACAGAAAAGTGCTCAGTTAAATGTAAGTGTTATTCCT
TCAGCAAAATATTCACTGACCCAAAACTCTTTATGGCATTTTACAATGCACACAGCCTCATGCAAGTTTA
GACAAGTGGATTTATACTGTCTTATGAGTGCCCGCCCCTGATATATTACCTCATTATGCAAAAATAACAT
ATCTTTCATGACTATTTTGACAAAAGTTTAAAACACATATGAAGTTCAAATTTCAGGAACCAAGGACTGC
CAGAAAATATTAGCCTCTACATTACGCATGCATTTAGAAACTTACCTGAAATCTGCCTTTTATAAAGGAA
TAGTATGGATAAGTGGAATTGTACATTTTTTAAACTTGATTGCCATTAAAGCAGAAATTATAAGGTTGCA
ACAATATTTGTTTCTAATCACTGGCTTTCTCAAGAGTATGGATTGACATATTGTGTTATGAATGCATATC
TCTCAGATGTGTTGAAGCATCCATTGCATCCATTTTTTATTATTTTCTTAGTTTTGTTCTTGGACAAATT
TAAACTTTTAAAAGATTATTCAAGATGAATTTAAAAGTCAACCCTTCACACAGTTTCCCTACTGTATGTA
GAATCCAGGTGCTGAAACCAAGTGTTTCTTTTCCCATGCTCTTTGTTAAACCCCAATTATAGATAATTTT
TCCAGTCTTAAGCTCTGTCCACCTTCAAGTCAATTCATAACCAAGTTTTTGAACGCTGCTATGAATTGCA
CTGTGAAAAGCACTCTTCCCTCTCAGTTTTCTTTTCATCCCAGCCATGTTTATCAGATCCTTAAGAACAT
TGTATTTCAGTCTTTTACATCAGTCTGAATTTTGGAAAAGAATGCAATAGTTGTACTCCACAGTCAGTGG
AACTGTTCCCTGAGTCCGAGGCTCATGTGTCATTCTGGCACTACATTTGCTTAAATTGCTATTTTGGCAA
CAGCACAGAAAACTAATATTTTTAAGCAGAGAATCTTGGCAATGAGTGAGAGATGTTAATTTCACAGAAG
CACAACTCCCAACCCAACCCTTAGGAAAAGCCCTCTTCCATCGTTACAGTGCTCAGTGAATATTAATTTA
GTTCTGCTTAAGTGGTTGCTATACAAACTTTGAATAGCCACCTAATAAATAAACCTTGCATGACAAACCT
GCAAAATATTTTATCAGCTGTTATTGGAAAGTGATTTTAAGCAATTGCTTCCTCAGTGTCAGGGCACATG
TGAATTTCCACACCAAACAGAGCATGAGGAACCAGTTGACATGCTGGGTTGTGACTGGCAGCTTTAGCAG
CCTCGGTACTGAAGCCACACCAGTGTCCGGATGGAAGTCTGCATCTGAGGTTGCTCAGTGTCCCGGTCAT
TCATTTACACATTTTAACTTGCATTAAAGAGCTGTTCTTTTCTGTGGCCTAGACTCTTTTCACTGATCTC
AAAATAAACTGGTTTTTTTCAAAAAAAAAAAAAAAAAAA

Human DDEF1 mRNA sequence - var2 (public gi: 6330853) (SEQ ID NO: 49)

GAAAAGAGAGCACGCAAAACAACATGGGATGATCCGCACAGAGATAACAGGAGCTGAGATTGCGGAAGAA
ATGGAGAAGGAAAGGCGCCTCTTTCAGCTCCAAATGTGTGAATATCTCATTAAAGTTAATGAAATCAAGA
CCAAAAAGGGTGTGGATCTGCTGCAGAATCTTATAAAGTATTACCATGCACAGTGCAATTTCTTTCAAGA
TGGCTTGAAAACAGCTGATAAGTTGAAACAGTACATTGAAAAACTGGCTGCTGATTTATATAATATAAAA
CAGACCCAGGATGAAGAAAAGAAACAGCTAACTGCACTCCGAGACTTAATAAAATCCTCTCTTCAACTGG
ATCAGAAAGAATCTAGGAGAGATTCTCAGAGCCGGCAAGGAGGATACAGCATGCATCAGCTCCAGGGCAA
TAAGGAATATGGCAGTGAAAAGAAGGGGTACCTGCTAAAGAAAAGTGACGGGATCCGGAAAGTATGGCAG
AGGAGGAAGTGTTCAGTCAAGAATGGGATTCTAACCATCTCACATGCCACATCTAACAGGCAACCAGCCA

Figure 36 part - 24

AGTTGAACCTTCTCACCTGCCAAGTAAAACCTAATGCCGAAGACAAAAAATCTTTTGACCTGATATCACA
TAATAGAACATATCACTTTCAGGCAGAAGATGAGCAGGATTATGTAGCATGGATATCAGTATTGACAAAT
AGCAAAGAAGAGGCCCTAACCATGGCCTTCCGTGGAGAGCAGAGTGCGGGAGAGAACAGCCTGGAAGACC
TGACAAAAGCCATTATTGAGGATGTCCAGCGGCTCCCAGGGAATGACATTTGCTGCGATTGTGGCTCATC
AGAACCCACCTGGCTTTCAACCAACTTGGGTATTTTGACCTGTATAGAATGTTCTGGCATCCATAGGGAA
ATGGGGGTTCATATTTCTCGCATTCAGTCTTTGGAACTAGACAAATTAGGAACTTCTGAACTCTTGCTGG
CCAAGAATGTAGGAAACAATAGTTTTAATGATATTATGGAAGCAAATTTACCCAGCCCCTCACCAAAACC
CACCCCTTCAAGTGATATGACTGTACGAAAAGAATATATCACTGCAAAGTATGTAGATCATAGGTTTTCA
AGGAAGACCTGTTCAACTTCATCAGCTAAACTAAATGAATTGCTTGAGGCCATCAAATCCAGGGATTTAC
TTGCACTAATTCAAGTCTATGCAGAAGGGGTAGAGCTAATGGAACCACTGCTGGAACCTGGGCAGGAGCT
TGGGGAGACAGCCCTTCACCTTGCCGTCCGAACTGCAGATCAGACATCTCTCCATTTGGTTGACTTCCTT
GTACAAAACTGTGGGAACCTGGATAAGCAGACGGCCCTGGGAAACACAGTTCTACACTACTGTAGTATGT
ACAGTAAACCTGAGTGTTTGAAGCTTTTGCTCAGGAGCAAGCCCACTGTGGATATAGTTAACCAGGCTGG
AGAAACTGCCCTAGACATAGCAAAGAGACTAAAAGCTACCCAGTGTGAAGATCTGCTTTCCCAGGCTAAA
TCTGGAAAGTTCAATCCACACGTCCACGTAGAATATGAGTGGAATCTTCGACAGGAGGAGATAGATGAGA
GCGATGATGATCTGGATGACAAACCAAGCCCTATCAAGAAAGAGCGCTCACCCAGACCTCAGAGCTTCTG
CCACTCCTCCAGCATCTCCCCCCAGGACAAGCTGGCACTGCCAGGATTCAGCACTCCAAGGGACAAACAG
CGGCTCTCCTATGGAGCCTTCACCAACCAGATCTTCGTTTCCACAAGCACAGACTCGCCCACATCACCAA
CCACGGAGGCTCCCCCTCTGCCTCCTAGGAACGCCGGGAAAGGTCCAACTGGCCCACCTTCAACACTCCC
TCTAAGCACCCAGACCTCTAGTGGCAGCTCCACCCTATCCAAGAAGAGGCCTCCTCCCCCACCACCCGGA
CACAAGAGAACCCTATCCGACCCTCCCAGCCCACTACCTCATGGGCCCCCAAACAAAGGCGCAGTTCCTT
GGGGTAACGATGGGGGTCCATCCTCTTCAAGTAAGACTACAAACAAGTTTGAGGGACTATCCCAGCAGTC
GAGCACCAGTTCTGCAAAGACTGCCCTTGGCCCAAGAGTTCTTCCTAAACTACCTCAGAAAGTGGCACTA
AGGAAAACAGATCATCTCTCCCTAGACAAAGCCACCATCCCGCCCGAAATCTTTCAGAAATCATCACAGT
TGGCAGAGTTGCCACAAAAGCCACCACCTGGAGACCTGCCCCCAAAGCCCACAGAACTGGCCCCCAAGCC
CCAAATTGGAGATTTGCCGCCTAAGCCAGGAGAACTGCCCCCCAAACCACAGCTGGGGGACCTGCCACCC
AAACCCCAACTCTCAGACTTACCTCCCAAACCACAGATGAAGGACCTGCCCCCCAAACCACAGCTGGGAG
ACCTGCTAGCAAAATCCCAGACTGGAGATGTCTCACCCAAGGCTCAGCAACCCTCTGAGGTCACACTGAA
GTCACACCCATTGGATCTATCCCCAAATGTGCAGTCCAGAGACGCCATCCAAAAGCAAGCATCTGAAGAC
TCCAACGACCTCACGCCTACTCTGCCAGAGACGCCCGTACCACTGCCCAGAAAAATCAATACGGGGAAAA
ATAAAGTGAGGCGAGTGAAGACCATTTATGACTGCCAGGCAGACAACGATGACGAGCTCACATTCATCGA
GGGAGAAGTGATTATCGTCACAGGGGAAGAGGACCAGGAGTGGTGGATTGGCCACATCGAAGGACAGCCT
GAAAGGAAGGGGGTCTTTCCAGTGTCCTTTGTTCATATCCTGTCTGACTAGCAAAACGCAGAACCTTAAG
ATTGTCCACATCCTTCATGCAAGACTGCTGCCTTCATGTAACCCTGGGCACAGTGTGTATATAGCTGCTG
TTACAGAGTAAGAAACTCATGGAAGGGCCACCTCAGGAGGGGGATATAATGTGTGTTGTAAATATCCTGT
GGTTTTCTGCCTTCACCAGTATGAGGGTAGCCTCGGACCCGGCGCGCCTTACTGGTTTGCCAAAGCCATC
CTTGGCATCTAGCACTTACATCTCTCTATGCTGTTCTACAAGCAAACAAACAAAAATAGGAGTATAGGAA
CTGCTGGCTTTGCAAATAGAAGTGGTCTCCAGCAACCGTTGAAAGGCATAGAATTGACTCTGTTCCTAAC
AATGCAGTATTCTCAATTGTGTTACTGAAAATGCAACATTAGCAAAGAGGTGGGTTCTGTTTTCCAGGTG
AAACTTTTAGCTCCATGACAGACCAGCCTGTAGTTATCTGTGTACACAGTTTACAGCTACAAAAACCTAC
TTTGGTATTTATTACAGAAAAGTGCTCAGTTAAATGTAAGTGTTATTCCTTCAGCAAAATATTCACTGAC
CCAAAACTCTTTATGGCATTTTACAATGCACACAGCCTCATGCAAGTTTAGACAAGTGGATTTATACTGT
CTTATGAGTGCCCGCCCCTGATATATTACCTCATTATGCAAAAATAACATATCTTTCATGACTATTTTGA
CAAAAGTTTAAAACACATATGAAGTTCAAATTTCAGGAACCAAGGACTGCCAGAAAATATTAGCCTCTAC
ATTACGCATGCATTTAGAAGCTTACCTGAAATCTGCCTTTTATAAAGGAATAGTATGGATAAGTGGAATT
GTACATTTTTTAAACTTGATTGCCATTAAAGCAGAAATTATAAGGTTGCAACAATATTTGTTTCTAATCA
CTGGCTTTCTCAAGAGTATGGATTGACATATTGTGTTATGAATGCACATCTCTCAGATGTGTTGAAGCAT
CCATTGCATCCATTTTTTATTATTTTCTTAGTTTTGTTCTTGGACAAATTTAAACTTTTAAAAGATTATT
CAAGATGAATTTAAAAGTCAACCCTTCACACAGTTTCCCTACTGTATGTAGAATCCAGGTGCTGAAACCA
AGTGTTTCTTTTCCCATGCTCTTTGTTAAACCCCAATTATAGATAATTTTTCCAGTCTTAAGCTCTGTCC
ACCTTCAAGTCAATTCATAACCAAGTTTTTGAACGCTGCTATGAATTGCACTGTGAAAAGCACTCTTCCC
TCTCAGTTTTCTTTTCATCCCAGCCATGTTTATCAGATCCTTAAGAACATTGTATTTCAGTCTTTTACAT
CAGTCTGAATTTTGGAAAAGAATGCAATAGTTGTACTCCACAGTCAGTGGAACTGTTCCCTGAGTCCGAG
GCTCATGTGTCATTCTGGCACTACATTTGCTTAAATTGCTATTTTGGCAACAGCACAGAAAACTAATATT
TTTAAGCAGAGAATCTTGGCAATGAGTGAGAGATGTTAATTTCACAGAAGCACAACTCCCAACCCAACCC
TTAGGAAAAGCCCTCTTCCATCGTTACAGTGCTCAGTGAATATTAATTTAGTTCTGCTTAAGTGGTTGCT
ATACAAACTTTGAATAGCCACCTAATAAATAAACCTTGCATGACAAACCTGCAAAATATTTTATCAGCTG
TTATTGGAAAGTGATTTTAAGCAATTGCTTCCTCAGTGTCAGGGCACATGTGAATTTCCACACCAAACAG
AGCATGAGGAACCAGTTGACATGCTGGGTTGTGACTGGCAGCTTTAGCAGCCTCGGTACTGAAGCCACAC
CAGTGTCCGGATGGAAGTCTGCATCTGAGGTTGCTCAGTGTCCCGGTCATTCATTTACACATTTTAACTT
GCATTAAAGAGCTGTTCTTTTCTGTGGCCTAGACTCTTTTCACTGATCTCAAAATAAACTGGTTTTTTTC
AAAAAAAAAAAAAAAAACAAAAACAAAAAAAAAACACAAAAGCTGCATGTCTAAAATTACATGGAGTTAGT
GTCTATTCTTTTTCCCCTTTTGCAGCAACTTACACAGCATTTTTAACACCTTTTTTTTCTAGTTTTTTTG

Figure 36 part - 25

TTCGGTTTTGTTTTCCATCAGGAATTTGAGTTCTCTCTAACCCAGCTTACTGTGGGACATAGGAAAACTC
AGTAGAAATACCTTTGGTGATCTTGTTGAGTTTAAGTCTGATCTTGATCTTAAACTCAGTAAGCCACTAT
CTGCAATTTTGTACATTATATAGTATTTTGAAGATATGGAACCTTATGAAAAAAAAATAGCAAATTAGTT
CTTTTTCCCCCAGAGGGGAAAGTTATGTTCTGCAAATAGTGTGTGTCTTATTTTACTGTTGAACAGCAAT
TGCTATTTATTTTTTTATTGCCTAGAACTTCAACATGTTGTATAGGAATCCTGTAGTGCCACTAGTTAAA
TGCCGAATTCTCATCTGGATGTTACCATCAAACATCAGTACACTTGTCATTTCACATGTGTTTAATGTGA
CAGTTTTTCAGTACTGTATGTGTTAATTTCTACTTTTTTTAATATTTAAAATTGCTTTTAAATAAACATA
TTCTCAGTTGATCCC

Human DDEF1 mRNA sequence - var3 (public gi: 7689053) (SEQ ID NO: 50)
GATTGCCATTAAAGCAGAAATTATAAGGTTGCAACAATATTTGTTTCTAATCACTGGCTTTCTCAAGAGT
ATGGATTGACATATTGTGTTATGAATGCACATCTCTCAGATGTGTTGAAGCATCCATTGCATCCATTTTT
TATTATTTTCTTAGTTTTGTTCTTGGACAAATTTAAACANNTTAAAAGATTATTCAAGATGAATTTAAAA
GTCAACCCTTCACACAGTTTCCCTACTGTATGTAGAATCCAGGTGCTGAAACCAAGTGTTTCTTTTCCCA
TGCTCTTTGTTAAACTCCAATTATAGATAATTTTTCCAGTCTTAAGCTCTGTCCACCTTCAAGTCAATTC
ATAACCAAGTTTTTGAACGCTGCTATGAATTGCACTGTGAAAAGCACTCTTCCCTCTCAGTTTTCGTTCA
TCCTGAGCCAGAATCAAAAAAAAAAA

Human DDEF1 mRNA sequence - var4 (public gi: 16552319) (SEQ ID NO: 51)
CAGAACCTTAAGATTGTCCACATCCTTCATGCAAGACTGCTGCCTTCATGTAACCCTGGGCACAGTGTGT
ATATAGCTGCTGTTACAGAGTAAGAAACTCATGGAAGGGCCACCTCAGGAGGGGGATATAATGTGTGTTG
TAAATATCCTGTGGTTTTCTGCCTTCACCAGTATGAGGGTAGCCTCGGACCCGGCGCGCCTTACTGGTTT
GCCAAAGCCATCCTTGGCATCTAGCACTTACATCTCTCTATGCTGTTCTACAAGCAAACAAACAAAAATA
GGAGTATAGGAACTGCTGGCTTTGCAAATAGAAGTGGTCTCCAGCAACCGTTGAAAGGCATAGAATTGAC
TCTGTTCCTAACAATGCAGTATTCTCAATTGTGTTACTGAAAATGCAACATTAGCAAAGAGGTGGGTTCT
GTTTTCCAGGTGAAACTTTTAGCTCCATGACAGACCAGCCTGTAGTTATCTGTGTACACAGTTTACAGCT
ACAAAAACCTACTTTGGTATTTATTACAGAAAAGTGCTCAGTTAAATGTAAGTGCTATTCCTTCAGCAAA
ATATTCACTGACCCAAAACTCTTTATGGCATTTTACAATGCACACAGCCTCATGCAAGTTTAGACAAGTG
GATTTATACTGTCTTATGAGTGCCCGCCCCTGATATATTACCTCATTATGCAAAAATAACATATCTTTCA
TGACTATTTTGACAAAAGTTTAAAACACATATGAAGTTCAAATTTCAGGAACCAAGGACTGCCAGAAAAT
ATTAGCCTCTACATTACGCATGCATTTAGAAGCTTACCTGAAATCTGCCTTTTATAAAGGAATAGTATGG
ATAAGTGGAATTGTACATTTTTTAAACTTGATTGCCATTAAAGCAGAAATTATAAGGTTGCAACAATATT
TGTTTCTAATCACTGGCTTTCTCAAGAGTATGGATTGACATATTGTGTTATGAATGCACATCTCTCAGAT
GTGTTGAAGCATCCATTGCATCCATTTTTTATTATTTTCTTAGTTTTGTTCTTGGACAAATTTAAACTTT
TAAAAGATTATTCAAGATGAATTTAAAAGTCAACCCTTCACACAGTTTCCCTACTGTATGTAGAATCCAG
GTGCTGAAACCAAGTGTTTCTTTTCCCATGCTCTTTGTTAAACCCCAATTATAGATAATTTTTCCAGTCT
TAAGCTCTGTCCACCTTCAAGTCAATTCATAACCAAGTTTTTGAACGCTGCTATGAATTGCACTGTGAAA
AGCACTCTTCCCTCTCAGTTTTCTTTTCATCCCAGCCATGTTTATCAGATCCTTAAGAACATTGTATTTC
AGTCTTTTACATCAGTCTGAATTTTGGAAAAGAATGCAATAGTTGTACTCCACAGTCAGTGGAACTGTTC
CCTGAGTCCGAGGCTCATGTGTCATTCTGGCACTACATTTGCTTAAATTGCTATTTTGGCAACAGCACAG
AAAACTAATATTTTTAAGCAGAGAATCTTGGCAATGAGTGAGAGATGTTAATTTCACAGAAGCACAACTC
CCAACCCAACCCTTAGGAAAAGCCCTCTTCCATCGTTACAGTGCTCAGTGAATATTAATTTAGTTCTGCT
TAAGTGGTTGCTATACAAACTTTGAATAGCCACCTAATAAATAAACCTTGCATGACAAACCTGCAAAATA
TTTTATCAGCTGTTATTGGAAAGTGATTTTAAGCAATTGCTTCCTCAGTGTCAGGGCACATGTGAATTTC
CACACCAAACAGAGCATGAGGAACCAGTTGACATGCTGGGTTGTGACTGGCAGCTTTAGCAGCCTCGGTA
CTGAAGCCACACCAGTGTCCGGATGGAAGTCTGCATCTGAGGTTGCTCAGTGTCCCGGTCATTCATTTAC
ACATTTTAACTTGCATTAAAGAGCTGTTCTTTTCTGTGGCCTAGACTCTTTTCACTGATCTCAAAATAAA
CTGGTTTTTTTC

Human DDEF1 mRNA sequence - var5 (public gi: 18088817) (SEQ ID NO: 52)
CAGCTACAAAAACCTACTTTGGTATTTATTACAGAAAAGTGCTCAGTTAAATGTAAGTGTTATTCCTTCA
GCAAAATATTCACTGACCCAAAACTCTTTATGGCATTTTACAATGCACACAGCCTCATGCAAGTTTAGAC
AAGTGGATTTATACTGTCTTATGAGTGCCCGCCCCTGATATATTACCTCATTATGCAAAAATAACATATC
TTTCATGACTATTTTGACAAAAGTTTAAAACACATATGAAGTTCAAATTTCAGGAACCAAGGACTGCCAG
AAAATATTAGCCTCTACATTACGCATGCATTTAGAAGCTTACCTGAAATCTGCCTTTTATAAAGGAATAG
TATGGATAAGTGGAATTGTACATTTTTTAAACTTGATTGCCATTAAAGCAGAAATTATAAGGTTGCAACA
ATATTTGTTTCTAATCACTGGCTTTCTCAAGAGTATGGATTGACATATTGTGTTATGAATGCACATCTCT
CAGATGTGTTGAAGCATCCATTGCATCCATTTTTTATTATTTTCTTAGTTTTGTTCTTGGACAAATTTAA
ACTTTTAAAAGATTATTCAAGATGAATTTAAAAGTCAACCCTTCACACAGTTTCCCTACTGTATGTAGAA
TCCAGGTGCTGAAACCAAGTGTTTCTTTTCCCATGCTCTTTGTTAAACCCCAATTATAGATAATTTTTCC
AGTCTTAAGCTCTGTCCACCTTCAAGTCAATTCATAACCAAGTTTTTGAACGCTGCTATGAATTGCACTG
TGAAAAGCACTCTTCCCTCTCAGTTTTCTTTTCATCCCAGCCATGTTTATCAGATCCTTAAGAACATTGT

Figure 36 part - 26

ATTTCAGTCTTTTACATCAGTCTGAATTTTGGAAAAGAATGCAATAGTTGTACTCCACAGTCAGTGGAAC
TGTTCCCTGAGTCCGAGGCTCATGTGTCATTCTGGCACTACATTTGCTTAAATTGCTATTTTGGCAACAG
CACAGAAAACTAATATTTTTAAGCAGAGAATCTTGGCAATGAGTGAGAGATGTTAATTTCACAGAAGCAC
AACTCCCAACCCAACCCTTAGGAAAAGCCCTCTTCCATCGTTACAGTGCTCAGTGAATATTAATTTAGTT
CTGCTTAAGTGGTTGCTATACAAACTTTGAATAGCCACCTAATAAATAAACCTTGCATGACAAACCTGCA
AAATATTTTATCAGCTGTTATTGGAAAGTGATTTTAAGCAATTGCTTCCTCAGTGTCAGGGCACATGTGA
ATTTCCACACCAAACAGAGCATGAGGAACCAGTTGACATGCTGGGTTGTGACTGGCAGCTTTAGCAGCCT
CGGTACTGAAGCCACACCAGTGTCCGGATGGAAGTCTGCATCTGAGGTTGCTCAGTGTCCCGGTCATTCA
TTTACACATTTTAACTTGCATTAAAGAGCTGTTCTTTTCTGTGGCCTAGACTCTTTTCACTGATCTCAAA
ATAAACTGGTTTTTTACAAAAAAAAAAAAAAAAAAAAAAAAAAA

Human DDEF1 mRNA sequence - var6 (Predicted by Proteologics) (SEQ ID NO: 53)

TTTCGACGCGTGGGTTTTATTCCCTTGAAGACTTTGGAAAGATTTTGTCATTCATCGCAATGATTGGTCA
GCCTCAAGAAGCATGCAGGAGCCATCATAAGAGTCACAAGGCTCTAGACCAAGATAGAACAGCCCTTCAG
AAAGTGAAGAAGTCTGTAAAAGCAATATATAATTCTGGTCAAGATCATGTACAAAATGAAGAAAACTATG
CACAAGTTCTTGATAAGTTTGGGAGTAATTTTTTAAGTCGAGACAACCCCGACCTTGGCACCGCGTTTGT
CAAGTTTTCTACTCTTACAAAGGAACTGTCCACACTGCTGAAAAATCTGCTCCAGGGTTTGAGCCACAAT
GTGATCTTCACCTTGGATTCTTTGTTAAAAGGAGACCTAAAGGGAGTCAAAGGAGATCTCAAGAAGCCAT
TTGACAAAGCCTGGAAAGATTATGAGACAAAGTTTACAAAAATTGAGAAAGAGAAAAGAGAGCACGCAAA
ACAACATGGGATGATCCGCACAGAGATAACAGGAGCTGAGATTGCGGAAGAAATGGAGAAGGAAAGGCGC
CTCTTTCAGCTCCAAATGTGTGAATATCTCATTAAAGTTAATGAAATCAAGACCAAAAAGGGTGTGGATC
TGCTGCAGAATCTTATAAAGTATTACCATGCACAGTGCAATTTCTTTCAAGATGGCTTGAAAACAGCTGA
TAAGTTGAAACAGTACATTGAAAAACTGGCTGCTGATTTATATAATATAAAACAGACCCAGGATGAAGAA
AAGAAACAGCTAACTGCACTCCGAGACTTAATAAAATCCTCTCTTCAACTGGATCAGAAAGAATCTAGGA
GAGATTCTCAGAGCCGGCAAGGAGGATACAGCATGCATCAGCTCCAGGGCAATAAGGAATATGGCAGTGA
AAAGAAGGGGTACCTGCTAAAGAAAAGTGACGGGATCCGGAAAGTATGGCAGAGGAGGAAGTGTTCAGTC
AAGAATGGGATTCTAACCATCTCACATGCCACATCTAACAGGCAACCAGCCAAGTTGAACCTTCTCACCT
GCCAAGTAAAACCTAATGCCGAAGACAAAAAATCTTTTGACCTGATATCACATAATAGAACATATCACTT
TCAGGCAGAAGATGAGCAGGATTATGTAGCATGGATATCAGTATTGACAAATAGCAAAGAAGAGGCCCTA
ACCATGGCCTTCCGTGGAGAGCAGAGTGCGGGAGAGAACAGCCTGGAAGACCTGACAAAAGCCATTATTG
AGGATGTCCAGCGGCTCCCAGGGAATGACATTTGCTGCGATTGTGGCTCATCAGAACCCACCTGGCTTTC
AACCAACTTGGGTATTTTGACCTGTATAGAATGTTCTGGCATCCATAGGGAAATGGGGGTTCATATTTCT
CGCATTCAGTCTTTGGAACTAGACAAATTAGGAACTTCTGAACTCTTGCTGGCCAAGAATGTAGGAAACA
ATAGTTTTAATGATATTATGGAAGCAAATTTACCCAGCCCCTCACCAAAACCCACCCCTTCAAGTGATAT
GACTGTACGAAAAGAATATATCACTGCAAAGTATGTAGATCATAGGTTTTCAAGGAAGACCTGTTCAACT
TCATCAGCTAAACTAAATGAATTGCTTGAGGCCATCAAATCCAGGGATTTACTTGCACTAATTCAAGTCT
ATGCAGAAGGGGTAGAGCTAATGGAACCACTGCTGGAACCTGGGCAGGAGCTTGGGGAGACAGCCCTTCA
CCTTGCCGTCCGAACTGCAGATCAGACATCTCTCCATTTGGTTGACTTCCTTGTACAAAACTGTGGGAAC
CTGGATAAGCAGACGGCCCTGGGAAACACAGTTCTACACTACTGTAGTATGTACAGTAAACCTGAGTGTT
TGAAGCTTTTGCTCAGGAGCAAGCCCACTGTGGATATAGTTAACCAGGCTGGAGAAACTGCCCTAGACAT
AGCAAAGAGACTAAAAGCTACCCAGTGTGAAGATCTGCTTTCCCAGGCTAAATCTGGAAAGTTCAATCCA
CACGTCCACGTAGAATATGAGTGGAATCTTCGACAGGAGGAGATAGATGAGAGCGATGATGATCTGGATG
ACAAACCAAGCCCTATCAAGAAAGAGCGCTCACCCAGACCTCAGAGCTTCTGCCACTCCTCCAGCATCTC
CCCCCAGGACAAGCTGGCACTGCCAGGATTCAGCACTCCAAGGGACAAACAGCGGCTCTCCTATGGAGCC
TTCACCAACCAGATCTTCGTTTCCACAAGCACAGACTCGCCCACATCACCAACCACGGAGGCTCCCCCTC
TGCCTCCTAGGAACGCCGGGAAAGGTCCAACTGGCCCACCTTCAACACTCCCTCTAAGCACCCAGACCTC
TAGTGGCAGCTCCACCCTATCCAAGAAGAGGCCTCCTCCCCCACCACCCGGACACAAGAGAACCCTATCC
GACCCTCCCAGCCCACTACCTCATGGGCCCCCAAACAAAGGCGCAGTTCCTTGGGGTAACGATGGGGGTC
CATCCTCTTCAAGTAAGACTACAAACAAGTTTGAGGGACTATCCCAGCAGTCGAGCACCAGTTCTGCAAA
GACTGCCCTTGGCCCAAGAGTTCTTCCTAAACTACCTCAGAAAGTGGCACTAAGGAAAACAGATCATCTC
TCCCTAGACAAAGCCACCATCCCGCCCGAAATCTTTCAGAAATCATCACAGTTGGCAGAGTTGCCACAAA
AGCCACCACCTGGAGACCTGCCCCCAAAGCCCACAGAACTGGCCCCCAAGCCCCAAATTGGAGATTTGCC
GCCTAAGCCAGGAGAACTGCCCCCCAAACCACAGCTGGGGGACCTGCCACCCAAACCCCAACTCTCAGAC
TTACCTCCCAAACCACAGATGAAGGACCTGCCCCCCAAACCACAGCTGGGAGACCTGCTAGCAAAATCCC
AGACTGGAGATGTCTCACCCAAGGCTCAGCAACCCTCTGAGGTCACACTGAAGTCACACCCATTGGATCT
ATCCCCAAATGTGCAGTCCAGAGACGCCATCCAAAAGCAAGCATCTGAAGACTCCAACGACCTCACGCCT
ACTCTGCCAGAGACGCCCGTACCACTGCCCAGAAAAATCAATACGGGGAAAAATAAAGTGAGGCGAGTGA
AGACCATTTATGACTGCCAGGCAGACAACGATGACGAGCTCACATTCATCGAGGGAGAAGTGATTATCGT
CACAGGGGAAGAGGACCAGGAGTGGTGGATTGGCCACATCGAAGGACAGCCTGAAAGGAAGGGGGTCTTT
CCAGTGTCCTTTGTTCATATCCTGTCTGACTAGCAAAACGCAGAACCTTAAGATTGTCCACATCCTTCAT
GCAAGACTGCTGCCTTCATGTAACCCTGGGCACAGTGTGTATATAGCTGCTGTTACAGAGTAAGAAACTC
ATGGAAGGGCCACCTCAGGAGGGGGATATAATGTGTGTTGTAAATATCCTGTGGTTTTCTGCCTTCACCA
GTATGAGGGTAGCCTCGGACCCGGCGCGCCTTACTGGTTTGCCAAAGCCATCCTTGGCATCTAGCACTTA

Figure 36 part - 27

CATCTCTCTATGCTGTTCTACAAGCAAACAAACAAAAATAGGAGTATAGGAACTGCTGGCTTTGCAAATA
GAAGTGGTCTCCAGCAACCGTTGAAAGGCATAGAATTGACTCTGTTCCTAACAATGCAGTATTCTCAATT
GTGTTACTGAAAATGCAACATTAGCAAAGAGGTGGGTTCTGTTTTCCAGGTGAAACTTTTAGCTCCATGA
CAGACCAGCCTGTAGTTATCTGTGTACACAGTTTACAGCTACAAAAACCTACTTTGGTATTTATTACAGA
AAAGTGCTCAGTTAAATGTAAGTGTTATTCCTTCAGCAAAATATTCACTGACCCAAAACTCTTTATGGCA
TTTTACAATGCACACAGCCTCATGCAAGTTTAGACAAGTGGATTTATACTGTCTTATGAGTGCCCGCCCC
TGATATATTACCTCATTATGCAAAAATAACATATCTTTCATGACTATTTTGACAAAAGTTTAAAACACAT
ATGAAGTTCAAATTTCAGGAACCAAGGACTGCCAGAAAATATTAGCCTCTACATTACGCATGCATTTAGA
AGCTTACCTGAAATCTGCCTTTTATAAAGGAATAGTATGGATAAGTGGAATTGTACATTTTTTAAACTTG
ATTGCCATTAAAGCAGAAATTATAAGGTTGCAACAATATTTGTTTCTAATCACTGGCTTTCTCAAGAGTA
TGGATTGACATATTGTGTTATGAATGCACATCTCTCAGATGTGTTGAAGCATCCATTGCATCCATTTTTT
ATTATTTTCTTAGTTTTGTTCTTGGACAAATTTAAACTTTTAAAAGATTATTCAAGATGAATTTAAAAGT
CAACCCTTCACACAGTTTCCCTACTGTATGTAGAATCCAGGTGCTGAAACCAAGTGTTTCTTTTCCCATG
CTCTTTGTTAAACCCCAATTATAGATAATTTTTCCAGTCTTAAGCTCTGTCCACCTTCAAGTCAATTCAT
AACCAAGTTTTTGAACGCTGCTATGAATTGCACTGTGAAAAGCACTCTTCCCTCTCAGTTTTCTTTTCAT
CCCAGCCATGTTTATCAGATCCTTAAGAACATTGTATTTCAGTCTTTTACATCAGTCTGAATTTTGGAAA
AGAATGCAATAGTTGTACTCCACAGTCAGTGGAACTGTTCCCTGAGTCCGAGGCTCATGTGTCATTCTGG
CACTACATTTGCTTAAATTGCTATTTTGGCAACAGCACAGAAAACTAATATTTTTAAGCAGAGAATCTTG
GCAATGAGTGAGAGATGTTAATTTCACAGAAGCACAACTCCCAACCCAACCCTTAGGAAAAGCCCTCTTC
CATCGTTACAGTGCTCAGTGAATATTAATTTAGTTCTGCTTAAGTGGTTGCTATACAAACTTTGAATAGC
CACCTAATAAATAAACCTTGCATGACAAACCTGCAAAATATTTTATCAGCTGTTATTGGAAAGTGATTTT
AAGCAATTGCTTCCTCAGTGTCAGGGCACATGTGAATTTCCACACCAAACAGAGCATGAGGAACCAGTTG
ACATGCTGGGTTGTGACTGGCAGCTTTAGCAGCCTCGGTACTGAAGCCACACCAGTGTCCGGATGGAAGT
CTGCATCTGAGGTTGCTCAGTGTCCCGGTCATTCATTTACACATTTTAACTTGCATTAAAGAGCTGTTCT
TTTCTGTGGCCTAGACTCTTTTCACTGATCTCAAAATAAACTGGTTTTTTTCAAAAAAAAAAAAAAAACA
AAAACAAAAAAAAAACACAAAAGCTGCATGTCTAAAATTACATGGAGTTAGTGTCTATTCTTTTTCCCCT
TTTGCAGCAACTTACACAGCATTTTTAACACCTTTTTTTTCTAGTTTTTTTTGTTCGGTTTTGTTTTCCAT
CAGGAATTTGAGTTCTCTCTAACCCAGCTTACTGTGGGACATAGGAAAACTCAGTAGAAATACCTTTGGT
GATCTTGTTGAGTTTAAGTCTGATCTTGATCTTAAACTCAGTAAGCCACTATCTGCAATTTTGTACATTA
TATAGTATTTTGAAGATATGGAACCTTATGAAAAAAAAATAGCAAATTAGTTCTTTTTCCCCCAGAGGGG
AAAGTTATGTTCTGCAAATAGTGTGTGTCTTATTTTACTGTTGAACAGCAATTGCTATTTATTTTTTTAT
TGCCTAGAACTTCAACATGTTGTATAGGAATCCTGTAGTGCCACTAGTTAAATGCCGAATTCTCATCTGG
ATGTTACCATCAAACATCAGTACACTTGTCATTTCACATGTGTTTAATGTGACAGTTTTTCAGTACTGTA
TGTGTTAATTTCTACTTTTTTTTAATATTTAAAATTGCTTTTAAATAAACATATTCTCAGTTGATCCC

Human DDEF1 protein sequence - var1 (public gi: 31873728) (SEQ ID NO: 233)
ETKFTKIEKEKREHAKQHGMIRTEITGAEIAEEMEKERRLFQLQMCEYLIKVNEIKTKKGVDLLQNLIKY
YHAQCNFFQDGLKTADKLKQYIEKLAADLYNIKQTQDEEKKQLTALRDLIKSSLQLDQKEDSQSRQGGYS
MHQLQGNKEYGSEKKGYLLKKSDGIRKVWQRRKCSVKNGILTISHATSNRQPAKLNLLTCQVKPNAEDKK
SFDLISHNRTYHFQAEDEQDYVAWISVLTNSKEEALTMAFRGEQSAGENSLEDLTKAIIEDVQRLPGNDI
CCDCGSSEPTWLSTNLGILTCIECSGIHREMGVHISRIQSLELDKLGTSELLLAKNVGNNSFNDIMEANL
PSPSPKPTPSSDMTVRKEYITAKYVDHRFSRKTCSTSSAKLNELLEAIKSRDLLALIQVYAEGVELMEPL
LEPGQELGETALHLAVRTADQTSLHLVDFLVQNCGNLDKQTALGNTVLHYCSMYSKPECLKLLLRSKPTV
DIVNQAGETALDIAKRLKATQCEDLLSQAKSGKFNPHVHVEYEWNLRQEEIDESDDDLDDKPSPIKKERS
PRPQSFCHSSSISPQDKLALPGFSTPRDKQRLSYGAFTNQIFVSTSTDSPTSPTTEAPPLPPRNAGKGPT
GPPSTLPLSTQTSSGSSTLSKKRPPPPPPGHKRTLSDPPSPLPHGPPNKGAVPWGNDGGPSSSSKTTNKF
EGLSQQSSTSSAKTALGPRVLPKLPQKVALRKTDHLSLDKATIPPEIFQKSSQLAELPQKPPPGDLPPKP
TELAPKPQIGDLPPKPGELPPKPQLGDLPPKPQLSDLPPKPQMKDLPPKPQLGDLLAKSQTGDVSPKAQQ
PSEVTLKSHPLDLSPNVQSRDAIQKQASEDSNDLTPTLPETPVPLPRKINTGKNKVRRVKTIYDCQADND
DELTFIEGEVIIVTGEEDQEWWIGHIEGQPERKGVFPVSFVHILSD

Human DDEF1 protein sequence - var2 (public gi: 6330854) (SEQ ID NO: 234)
KREHAKQHGMIRTEITGAEIAEEMEKERRLFQLQMCEYLIKVNEIKTKKGVDLLQNLIKYYHAQCNFFQD
GLKTADKLKQYIEKLAADLYNIKQTQDEEKKQLTALRDLIKSSLQLDQKESRRDSQSRQGGYSMHQLQGN
KEYGSEKKGYLLKKSDGIRKVWQRRKCSVKNGILTISHATSNRQPAKLNLLTCQVKPNAEDKKSFDLISH
NRTYHFQAEDEQDYVAWISVLTNSKEEALTMAFRGEQSAGENSLEDLTKAIIEDVQRLPGNDICCDCGSS
EPTWLSTNLGILTCIECSGIHREMGVHISRIQSLELDKLGTSELLLAKNVGNNSFNDIMEANLPSPSPKP
TPSSDMTVRKEYITAKYVDHRFSRKTCSTSSAKLNELLEAIKSRDLLALIQVYAEGVELMEPLLEPGQEL
GETALHLAVRTADQTSLHLVDFLVQNCGNLDKQTALGNTVLHYCSMYSKPECLKLLLRSKPTVDIVNQAG
ETALDIAKRLKATQCEDLLSQAKSGKFNPHVHVEYEWNLRQEEIDESDDDLDDKPSPIKKERSPRPQSFC
HSSSISPQDKLALPGFSTPRDKQRLSYGAFTNQIFVSTSTDSPTSPTTEAPPLPPRNAGKGPTGPPSTLP

Figure 36 part - 28

LSTQTSSGSSTLSKKRPPPPPPGHKRTLSDPPSPLPHGPPNKGAVPWGNDGGPSSSSKTTNKFEGLSQQS
STSSAKTALGPRVLPKLPQKVALRKTDHLSLDKATIPPEIFQKSSQLAELPQKPPPGDLPPKPTELAPKP
QIGDLPPKPGELPPKPQLGDLPPKPQLSDLPPKPQMKDLPPKPQLGDLLAKSQTGDVSPKAQQPSEVTLK
SHPLDLSPNVQSRDAIQKQASEDSNDLTPTLPETPVPLPRKINTGKNKVRRVKTIYDCQADNDDELTFIE
GEVIIVTGEEDQEWWIGHIEGQPERKGVFPVSFVHILSD

Human DDEF1 protein sequence - var3 (public gi: 7689054) (SEQ ID NO: 235)
MNAHLSDVLKHPLHPFFIIFLVLFLDKFKXXKRLFKMNLKVNPSHSFPTVCRIQVLKPSVSFPMLFVKLQ
L

Human DDEF1 protein sequence - var4 (public gi: 18088818) (SEQ ID NO: 236)
MNAHLSDVLKHPLHPFFIIFLVLFLDKFKLLKDYSR

Human DDEF1 protein sequence - var5 (Predicted by Proteologics) (SEQ ID NO: 237)
MIGQPQEACRSHHKSHKALDQDRTALQKVKKSVKAIYNSGQDHVQNEENYAQVLDKFGSNFLSRDNPDLG
TAFVKFSTLTKELSTLLKNLLQGLSHNVIFTLDSLLKGDLKGVKGDLKKPFDKAWKDYETKFTKIEKEKR
EHAKQHGMIRTEITGAEIAEEMEKERRLFQLQMCEYLIKVNEIKTKKGVDLLQNLIKYYHAQCNFFQDGL
KTADKLKQYIEKLAADLYNIKQTQDEEKKQLTALRDLIKSSLQLDQKESRRDSQSRQGGYSMHQLQGNKE
YGSEKKGYLLKKSDGIRKVWQRRKCSVKNGILTISHATSNRQPAKLNLLTCQVKPNAEDKKSFDLISHNR
TYHFQAEDEQDYVAWISVLTNSKEEALTMAFRGEQSAGENSLEDLTKAIIEDVQRLPGNDICCDCGSSEP
TWLSTNLGILTCIECSGIHREMGVHISRIQSLELDKLGTSELLLAKNVGNNSFNDIMEANLPSPSPKPTP
SSDMTVRKEYITAKYVDHRFSRKTCSTSSAKLNELLEAIKSRDLLALIQVYAEGVELMEPLLEPGQELGE
TALHLAVRTADQTSLHLVDFLVQNCGNLDKQTALGNTVLHYCSMYSKPECLKLLLRSKPTVDIVNQAGET
ALDIAKRLKATQCEDLLSQAKSGKFNPHVHVEYEWNLRQEEIDESDDDLDDKPSPIKKERSPRPQSFCHS
SSISPQDKLALPGFSTPRDKQRLSYGAFTNQIFVSTSTDSPTSPTTEAPPLPPRNAGKGPTGPPSTLPLS
TQTSSGSSTLSKKRPPPPPPGHKRTLSDPPSPLPHGPPNKGAVPWGNDGGPSSSSKTTNKFEGLSQQSST
SSAKTALGPRVLPKLPQKVALRKTDHLSLDKATIPPEIFQKSSQLAELPQKPPPGDLPPKPTELAPKPQI
GDLPPKPGELPPKPQLGDLPPKPQLSDLPPKPQMKDLPPKPQLGDLLAKSQTGDVSPKAQQPSEVTLKSH
PLDLSPNVQSRDAIQKQASEDSNDLTPTLPETPVPLPRKINTGKNKVRRVKTIYDCQADNDDELTFIEGE
VIIVTGEEDQEWWIGHIEGQPERKGVFPVSFVHILSD

Human DDEF1 pray sequence - var1 (SEQ ID NO: 54)
GCGCCGCCATGGTAGTACCCATACGACGTACCAGTATTACGCTCATATGGCCATGGCAGGCCAGTGAATT
CCACACCAAGCAGTGGTATCAACGCAGAGTGGGCACAAAAGCCACGCACGCTGGANGACCTGCCCCCAAC
AGCCCACAGAAACTGGCCCCCAAGCCCCAAATTGGAGATTTGCCGCCTAAGCCAGGAGAACTGCCCCCCA
AACCACAGCTGGGGGACCTGCCACCCAAACCCCAACACTCAGACTTACCTCCCAAACCACAGATGAAGGA
CCTGCCCCCCAAACCACAGCTGGGAGACCTGCTAGCAAAATCCCAGACTGGAGATGTCTCACCCAAGGCT
CAGCAACCCTCTGAGGTCACACTGAAGTCACACCCATTGGATCTATCCCCAAATGTGCAGTCCAGAGACG
CCATCCAAAAGCAAGCATNTGAAGACTCCAACGACCTCACGCCTACTCTGCCAGAGACGCCCGTACCACT
GCCCANAAAAATCANTACGGGGAAAANTAANNTGAGGCGAGTGAAAACCTTTAATGACTGCCAGGCANAC
ANNATGACAAGCTCNATTCNTCNAGGGANAAGTGTTATCGTNCAGGGAAAAAGNNCNGGATTGTGGGTCC
NNCAATTTTCNTCCNNTNNTCNNACTTATTANAATNGCNNGGCAGGNNCCAATNGAACNCCNAANNNGNN
GAAAANAGGNNTTTNNNCAAGGANCNTNNNNTNGTTTNTTCCCNAAANNTTNNTTNGGNNTTTTTTTTNC
NCNCNTTTTTNTNNAAAAACNCNGNANNNNNNNNCAAGGNNNCCCNTNTNTNNCNTTNGGGGGGGGGNNG
NNTNNNGGGGGGNNNANACCCCCCC

Unigene Name: EIF3S3 Unigene ID: Hs.58189 Clone ID: 3GD_18

Human EIF3S3 mRNA sequence - var1 (public gi: 2351379) (SEQ ID NO: 55)
GAAAGATGGCGTCCCGCAAGGAAGGTACCGGCTCTACTGCCACCTCTTCCAGCTCCACCGCCGGCGCAGC
AGGGAAAGGCAAAGGCAAAGGCGGCTCGGGAGATTCAGCCGTGAAGCAAGTGCAGATAGATGGCCTTGTG
GTATTAAAGATAATCAAACATTATCAAGAAGAAGGACAAGGAACTGAAGTTGTTCAAGGAGTGCTTTTGG
GTCTGGTTGTAGAAGATCGGCTTGAAATTACCAACTGCTTTCCTTTCCCTCAGCACACAGAGGATGATGC
TGACTTTGATGAAGTCCAATATCAGATGGAAATGATGCGGAGCCTTCGCCATGTAAACATTGATCATCTT
CACGTGGGCTGGTATCAGTCCACATACTATGGCTCATTCGTTACCCGGGCACTCCTGGACTCTCAGTTTA
GTTACCAGCATGCCATTGAAGAATCTGTCGTTCTCATTTATGATCCCATAAAAACTGCCCAAGGATCTCT
CTCACTAAAGGCATACAGACTGACTCCTAAACTGATGGAAGTTTGTAAAGAAAAGGATTTTTCCCCTGAA
GCATTGAAAAAAGCAAATATCACCTTTGAGTACATGTTTGAAGAAGTGCCGATTGTAATTAAAAATTCAC
ATCTGATCAATGTCCTAATGTGGGAACTTGAAAAGAAGTCAGCTGTTGCAGATAAACATGAATTGCTCAG

Figure 36 part - 29

CCTTGCCAGCAGCAATCATTTGGGGAAGAATCTACAGTTGCTGATGGACAGAGTGGATGAAATGAGCCAA
GATATAGTTAAATACAACACATACATGAGGAATACTAGTAAACAACAGCAGCAGAAACATCAGTATCAGC
AGCGTCGCCAGCAGGAGAATATGCAGCGCCAGAGCCGAGGAGAACCCCCGCTCCCTGAGGAGGACCTGTC
CAAACTCTTCAAACCACCACAGCCGCCTGCCAGGATGGACTCGCTGCTCATTGCAGGCCAGATAAACACT
TACTGCCAGAACATCAAGGAGTTCACTGCCCAAAACTTAGGCAAGCTCTTCATGGCCCAGGCTCTTCAAG
AATACAACAACTAAGAAAAGGAAGTTTCCAGAAAAGAAGTTAACATGAACTCTTGAAGTCACACCAGGGC
AACTCTTGGAAGAAATATATTTGCATATTGAAAAGCACAGAGGATTTCTTTAGTGTCATTGCCGATTTTG
GCTATAACAGTGTCTTTCTAGCCATAATAAAATAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAA

Human EIF3S3 mRNA sequence - var2 (public gi: 21751901) (SEQ ID NO: 56)
AGGCGCGTAGCAAGAGCTTCTCTGAAAGACTGGCAGTATAGTAGTAGTCAGTGATAATATTGAGCCTTAA
TATGTTCCAGACACTGTCCTAAGTGATTTACCTTACATTATTCCCCTGAATGTTTATAATTCCCAAGTGA
AAGAAGGAAATGATATATTGGATAGCTATGAGTGGGGAGGTTTGTACTGGCTGCTTTCCCATAAAGAAAT
TAAGCACGTTCACGAAGGGCACGTAGTTTGTTAGTGTCTGGAACCCAGTTTTCGTGCCTGAAGTTCAAAT
GTTCTTGCTACACCACCATAGAAACTAACGTCACTCAGGAACCATTTGTCAGGGCAAAGGGTGCCACCAT
TTTGCATTTCCTCCTGCCTTAGGACCATCCTAAATCACTCGCATGGAGTGTTTTGGAAGAACTCTCAAGA
GCTTCGTTTGCCTAGAGTCAGAATTCCTAACCTTGAGTCCTGGTTTTGCCACAAACCCAAGCCGTTTGAT
CTTGGGCAACTCCCGAAGAAAGCTGGGTTCAACTTCCTCACTGTCAAACTGGTTGTAGGTCTAGATAAGT
TTCAAGTACTCTTTTTATGTGCATGGTCTCTGACATAGGAAGACTACATACTGGGCCAGTAACAGGAAGG
CACAAAGCTGACTGGAGGTTTAAAAATTACTTGGTCAATTTGATTAATGAGGAGAATGAATCAGAAAATT
TCAAGTTCTCCCGTGGCTAACTGTCGAGTATCCACTTCAAGATCATTCCATCGGAAAGAGGTCGAAAATG
TACAGTAGGCATGCACAAAGGATACCGCCTGGAAAGAAGATGGCGTCCCGCAAGGAAGGTACCGGCTCTA
CTGCCACCTCTTCCAGCTCCACCGCCGGCGCAGCAGGGAAAGGCAAAGGCAAAGGCGGCTCGGGAGATTC
AGCCGTGAAGCAAGTGCAGATAGATGGCCTTGTGGTATTAAAGATAATCAAACATTATCAAGAAGAAGGA
CAAGGAACTGAAGTTGTTCAAGGAGTGCTTTTGGGTCTGGTTGTAGAAGATCGGCTTGAAATTACCAACT
GCTTTCCTTTCCCTCAGCACACAGAGGATGATGCTGACTTTGATGAAGTCCAATATCAGATGGAAATGAT
GCGGAGCCTTCGCCATGTAAACATTGATCATCTTCACGTGGGCTGGTATCAGTCCACATACTATGGCTCA
TTCGTTACCCGGGCACTCCTGGACTCTCAGTTTAGTTACCAGCATGCCATTGAAGAATCTGTCGTTCTCA
TTTATGATCCCATAAAAACTGCCCAAGGATCTCTCTCACTAAAGGCATACAGACTGACTCCTAAACTGAT
GGAAGTTTGTAAAGAAAAGGATTTTTCCCCTGAAGCACTGAAAAAAGCAAATATCACCTTTGAGTACATG
TTTGAAGAAGTGCCGATTGTAATTAAAAATTCACATCTGATCAATGTCCTAATGTGGGAACTTGAAAAGA
AGTCAGCTGTTGCAGATAAACATGAATTGCTCAGCCTTGCCAGCAGCAATCATTTGGGGAAGAATCTACA
GTTGCTGATGGACAGAGTGGATGAAATGAGCCAAGATATAGTTAAATACAACACATACATGAGGAATACT
AGTAAACAACAGCAGCAGAAACATCAGTATCAGCAGCGTCGCCAGCAGGAGAATATGCAGCGCCAGAGCC
GAGGAGAACCCCCGCTCCCTGAGGAGGACCTGTCCAAACTCTTCAAACCACCACAGCCGCCTGCCAGGAT
GGACTCGCTGCTCATTGCAGGCCAGATAAACACTTACTGCCAGAACATCAAGGAGTTCACTGCCCAAAAC
TTAGGCAAGCTCTTCATGGCCCAGGCTCTTCAAGAATACAACAACTAAGAAAAGGAAGTTTCCAGAAAAG
AAGTTAACATGAACTCTTGAAGTCACACCAGGGCAACTCTTGGAAGAAATATATTTGCATATTGAAAAGC
ACAGAGGATTTCTTTAGTGTCATTGCCGATTTTGGCTATAACAGTGTCTTTCTAGCCATAATAAAATAAA
ACAAAATCTTG

Human EIF3S3 mRNA sequence - var3 (public gi: 12653234) (SEQ ID NO: 57)
GGCACGAGGATGGCGTCCCGCAAGGAAGGTACCGGCTCTACTGCCACCTCTTCCAGCTCCACCGCCGGCG
CAGCAGGGAAAGGCAAAGGCAAAGGCGGCTCGGGAGATTCAGCCGTGAAGCAAGTGCAGATAGATGGCCT
TGTGGTATTAAAGATAATCAAACATTATCAAGAAGAAGGACAAGGAACTGAAGTTGTTCAAGGAGTGCTT
TTGGGTCTGGTTGTAGAAGATCGGCTTGAAATTACCAACTGCTTTCCTTTCCCTCAGCACACAGAGGATG
ATGCTGACTTTGATGAAGTCCAATATCAGATGGAAATGATGCGGAGCCTTCGCCATGTAAACATTGATCA
TCTTCACGTGGGCTGGTATCAGTCCACATACTATGGCTCATTCGTTACCCGGGCACTCCTGGACTCTCAG
TTTAGTTACCAGCATGCCATTGAAGAATCTGTCGTTCTCATTTATGATCCCATAAAAACTGCCCAAGGAT
CTCTCTCACTAAAGGCATACAGACTGACTCCTAAACTGATGGAAGTTTGTAAAGAAAAGGATTTTTCCCC
TGAAGCATTGAAAAAAGCAAATATCACCTTTGAGTACATGTTTGAAGAAGTGCCGATTGTAATTAAAAAT
TCACATCTGATCAATGTCCTAATGTGGGAACTTGAAAAGAAGTCAGCTGTTGCAGATAAACATGAATTGC
TCAGCCTTGCCAGCAGCAATCATTTGGGGAAGAATCTACAGTTGCTGATGGACAGAGTGGATGAAATGAG
CCAAGATATAGTTAAATACAACACATACATGAGGAATACTAGTAAACAACAGCAGCAGAAACATCAGTAT
CAGCAGCGTCGCCAGCAGGAGAATATGCAGCGCCAGAGCCGAGGAGAACCCCCGCTCCCTGAGGAGGACC

Figure 36 part - 30

TGTCCAAACTCTTCAAACCACCACAGCCGCCTGCCAGGATGGACTCGCTGCTCATTGCAGGCCAGATAAA
CACTTACTGCCAGAACATCAAGGAGTTCACTGCCCAAAACTTAGGCAAGCTCTTCATGGCCCAGGCTCTT
CAAGAATACAACAACTAAGAAAAGGAAGTTTCCAGAAAAGAAGTTAACATGAACTCTTGAAGTCACACCA
GGGCAACTCTTGGAAGAAATATATTTGCATATTGAAAAGCACAGAGGATTTCTTTAGTGTCATTGCCGAT
TTTGGCTATAACAGTGTCTTTCTAGCCATAATAAAATAAAACAAAATCTTGAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

Human EIF3S3 protein sequence - var1 (public gi: 12653235) (SEQ ID NO: 238)
MASRKEGTGSTATSSSSTAGAAGKGKGKGGSGDSAVKQVQIDGLVVLKIIKHYQEEGQGTEVVQGVLLGL
VVEDRLEITNCFPFPQHTEDDADFDEVQYQMEMMRSLRHVNIDHLHVGWYQSTYYGSFVTRALLDSQFSY
QHAIEESVVLIYDPIKTAQGSLSLKAYRLTPKLMEVCKEKDFSPEALKKANITFEYMFEEVPIVIKNSHL
INVLMWELEKKSAVADKHELLSLASSNHLGKNLQLLMDRVDEMSQDIVKYNTYMRNTSKQQQQKHQYQQR
RQQENMQRQSRGEPPLPEEDLSKLFKPPQPPARMDSLLIAGQINTYCQNIKEFTAQNLGKLFMAQALQEY
NN

Unigene Name: EPS8L2 Unigene ID: Hs.55016

Human EPS8L2 mRNA sequence - var1 (public gi: 21264615) (SEQ ID NO: 58)
GTCGACGGCCATTACCAATCGCGAAACCCCGCAACCTGTCGCTCAGGTTCCTCCTCTCCCGGCCCCGCCC
CGGCCCGGCCCCGCCGAGCGTCCCACCCGCCCGCGGGAGACCTGGCGCCCCGGCCGAGGCGCGAACAGAC
GGACGCACCGGCGAGCGCCGAGGGGACAGGCCGAGCGCGGGGCGCCGGAGGCAGGTGTGGGACAGGCACT
GGCCTCAGACCGGGGCCACACTGAGGTCTGCCCTTCTCCCGCTGGCCGCCACCCAAGACACCATGAGCCA
GTCCGGGGCCGTGAGCTGCTGCCCGGGTGCCACCAATGGCAGCCTGGGCCGGTCCGACGGTGTGGCCAAG
ATGAGCCCCAAGGACCTGTTTGAGCAGAGGAAGAAGTATTCCAACTCCAACGTCATCATGCACGAGACCT
CGCAGTACCACGTCCAGCACCTGGCCACATTCATCATGGACAAGAGCGAAGCCATCACGTCTGTGGACGA
CGCCATCCGGAAGCTGGTGCAGCTGAGCTCCAAGGAGAAGATCTGGACCCAGGAGATGCTGCTGCAGGTG
AACGACCAGTCGTTGCGGCTGCTGGACATCGAGTCACAGGAGGAGCTGGAAGACTTCCCGCTGCCCACGG
TGCAGCGCAGCCAGACGGTCCTCAACCAGCTGCGCTACCCGTCTGTGCTGCTGCTCGTGTGCCAGGACTC
GGAGCAGAGCAAGCCGGATGTCCACTTCTTCCACTGCGATGAGGTGGAGGCAGAGCTGGTGCACGAGGAC
ATCGAGAGCGCGTTGGCCGACTGCCGGCTGGGCAAGAAGATGCGGCCGCAGACCCTGAAGGGACACCAGG
AGAAGATTCGGCAGCGGCAGTCCATCCTGCCTCCTCCCCAGGGCCCGGCGCCCATCCCCTTCCAGCACCG
CGGCGGGGATTCCCCGGAGGCCAAGAATCGCGTGGGCCCGCAGGTGCCACTCAGCGAGCCAGGTTTCCGC
CGTCGGGAGTCGCAGGAGGAGCCGCGGGCCGTGCTGGCTCAGAAGATAGAGAAGGAGACGCAAATCCTCA
ACTGCGCCCTGGACGACATCGAGTGGTTTGTGGCCCGGCTGCAGAAGGCAGCCGAGGCTTTCAAGCAGCT
GAACCAGCGGAAAAAGGGGAAGAAGAAGGGCAAGAAGGCGCCAGCAGAGGGCGTCCTCACACTGCGGGCA
CGGCCCCCCTCTGAGGGCGAGTTCATCGACTGCTTCCAGAAAATCAAGCTGGCGATTAACTTGCTGGCAA
AGCTGCAGAAGCACATCCAGAACCCCAGCGCCGCGGAGCTCGTGCACTTCCTCTTCGGGCCTCTGGACCT
GATCGTCAACACCTGCAGTGGCCCAGACATCGCACGCTCCGTCTCCTGCCCACTGCTCTCCCGAGATGCC
GTGGACTTCCTGCGCGGCCACCTGGTCCCTAAGGAGATGTCGCTGTGGGAGTCACTGGGAGAGAGCTGGA
TGCGGCCCCGTTCCGAGTGGCCGCGGGAGCCACAGGTGCCCCTCTACGTGCCCAAGTTCCACAGCGGCTG
GGAGCCTCCTGTGGATGTGCTGCAGGAGGCCCCCTGGGAGGTGGAGGGGCTGGCGTCTGCCCCCATCGAG
GAGGTGAGTCCAGTGAGCCGACAGTCCATAAGAAACTCCCAGAAGCACAGCCCCACTTCAGAGCCCACCC
CCCCGGGGGATGCCCTACCACCAGTCAGCTCCCCACATACTCACAGGGGCTACCAGCCAACACCAGCCAT
GGCCAAGTACGTCAAGATCCTGTATGACTTCACAGCCCGAAATGCCAACGAGCTATCGGTGCTCAAGGAT
GAGGTCCTAGAGGTGCTGGAGGACGGCCGGCAGTGGTGGAAGCTGCGCAGCCGCAGCGGCCAGGCGGGGT
ACGTGCCCTGCAACATCCTAGGCGAGGCGCGACCGGAGGACGCCGGCGCCCCGTTCGAGCAGGCCGGTCA
GAAGTACTGGGGCCCCGCCAGCCCGACCCACAAGCTACCCCCAAGCTTCCCGGGGAACAAAGACGAGCTC
ATGCAGCACATGGACGAGGTCAACGACGAGCTCATCCGGAAAATCAGCAACATCAGGGCGCAGCCACAGA
GGCACTTCCGCGTGGAGCGCAGCCAGCCCGTGAGCCAGCCGCTCACCTACGAGTCGGGTCCGGACGAGGT
CCGCGCCTGGCTGGAAGCCAAGGCCTTCAGCCCGCGGATCGTGGAGAACCTGGGCATCCTGACCGGGCCG
CAGCTCTTCTCCCTCAACAAGGAGGAGCTGAAGAAAGTGTGCGGCGAGGAGGGCGTCCGCGTGTACAGCC
AGCTCACCATGCAGAAGGCCTTCCTGGAGAAGCAGCAAAGTGGGTCGGAGCTGGAAGAACTCATGAACAA
GTTTCATTCCATGAATCAGAGGAGGGGGGAGGACAGCTAGGCCCAGCTGCCTTGGGCTGGGGCCTGCGGA
GGGGAAGCCCACCCACAATGCATGGAGTATTATTTTTATATGTGTATGTATTTTGTATCAAGGACACGGA
GGGGGTGTGGTGCTGGCTAGAGGTCCCTGCCCCTGTCTGGAGGCACAACGCCCATCCTTAGGCCAAACAG
TACCCAAGGCCTCAGCCCACACCAAGACTAATCTCAGCCAAACCTGCTGCTTGGTGGTGCCAGCCCCTTG
TCCACCTTCTCTTGAGGCCACAGAACTCCCTGGGGCTGGGGCCTCTTTCTCTGGCCTCCCCTGTGCACCT
GGGGGGTCCTGGCCCCTGTGATGCTCCCCCATCCCCACCCACTTCTACATCCATCCACACCCCAGGGTGA
GCTGGAGCTCCAGGCTGGCCAGGCTGAACCTCGCACACACGCAGAGTTCTGCTCCCTGAGGGGGGCCCGG
GAGGGGCTCCAGCAGGAGGCCGTGGGTGCCATTCGGGGGAAAGTGGGGGAACGACACACACTTCACCTGC

Figure 36 part - 31

AAGGGCCGACAACGCAGGGGACACCGTGCCGGCTTCAGACACTCCCAGCGCCCACTCTTACAGGCCCAGG
ACTGGAGCTTTCTCTGGCCAAGTTTCAGGCCAATGATCCCCGCATGGTGTTGGGGGTGCTGGTGTGTCTT
GGTGCCTGGACTTGAGTCTCACCCTACAGATGAGAGGTGGCTGAGGCACCAGGGCTAAGCAATTAAACCA
GTTAAGTCTCCCAGGAAAAAAAAAAAAAAA

Human EPS8L2 protein sequence - var1 (public gi: 21264616) (SEQ ID NO: 239)
MSQSGAVSCCPGATNGSLGRSDGVAKMSPKDLFEQRKKYSNSNVIMHETSQYHVQHLATFIMDKSEAITS
VDDAIRKLVQLSSKEKIWTQEMLLQVNDQSLRLLDIESQEELEDFPLPTVQRSQTVLNQLRYPSVLLLVC
QDSEQSKPDVHFFHCDEVEAELVHEDIESALADCRLGKKMRPQTLKGHQEKIRQRQSILPPPQGPAPIPF
QHRGGDSPEAKNRVGPQVPLSEPGFRRRESQEEPRAVLAQKIEKETQILNCALDDIEWFVARLQKAAEAF
KQLNQRKKGKKKGKKAPAEGVLTLRARPPSEGEFIDCFQKIKLAINLLAKLQKHIQNPSAAELVHFLFGP
LDLIVNTCSGPDIARSVSCPLLSRDAVDFLRGHLVPKEMSLWESLGESWMRPRSEWPREPQVPLYVPKFH
SGWEPPVDVLQEAPWEVEGLASAPIEEVSPVSRQSIRNSQKHSPTSEPTPPGDALPPVSSPHTHRGYQPT
PAMAKYVKILYDFTARNANELSVLKDEVLEVLEDGRQWWKLRSRSGQAGYVPCNILGEARPEDAGAPFEQ
AGQKYWGPASPTHKLPPSFPGNKDELMQHMDEVNDELIRKISNIRAQPQRHFRVERSQPVSQPLTYESGP
DEVRAWLEAKAFSPRIVENLGILTGPQLFSLNKEELKKVCGEEGVRVYSQLTMQKAFLEKQQSGSELEEL
MNKFHSMNQRRGEDS

Human EPS8L2 pray sequence - var1 (SEQ ID NO: 59)
TCNTNCGCCGCCATGGNAGTACCCATACGACGTACCAGNATTACGCTCATATGGCCATGGNAGGCCAGTG
AATTCCACCCAAGCAGTGGTATCAACGCAGAGTGGCCATTATGGCGGGGGGAACAAAGACGAGCTCATGC
AGCACATGGACGAGGTCAACGACGAGCTCATCCGGAAAATCAGCAACATCAGGGCGCAGCCACAGAGGCA
CTTCCGCGTGGAGCGCAGCCAGCCCGTGAGCCAGCCGCTCACCTACGAGTCGGGTCCGGACGAGGTCCGC
GCCTGGCTGGAAGCCAAGGCCTTCAGCCCGCGGATCGTGGAGAACCTGGGCATCCTGACCGGGCCGCAGC
TCTTCTCCCTCAACAAGGAGGAGCTGAAGAAAGTGTGCGGCGAGGAGGGCGTCCGCGTGTACAGCCAGCT
CACCATGCAGAAGGCCTTCCTGGAGAAGCAGCAAAGTGGGTCGGAGCTGGAAGAACTCATGAACAAGTTT
CATTCCATGAATCAGAGGAGGGGGGAGGACAGCTAGGCCCAGCTGCCTTGGGCTGGGGCCTGCGGAGGGG
AAGCCCACCCACAATGCATGGAGTATTATTTTTATATGTGTATGTATTTTGTATCAAGGACACGGAGGGG
GGTGTGGTGCTTGGCTANAGGTCCCTGCCCCTGTTTGGNAGGCACAACNCCCATNCTTTAGNCCAAANAG
TNACCCAANGGCCTNAACCCCAANCAAGNTTATTTTNANNCCAAACNNGNTTGNTTGGTTGGTNCCAACC
CCNTTGTTGGTGCCNNNCCCNTTGTNCANCNTTNNTTTTNGGNCNCNANAANTNCCTNGGGGTNGGGGGN
CNTTTTTTNTNN

Human EPS8L2 pray sequence - var2 (SEQ ID NO: 60)
CGAGCGCCGCCTGGNATACCCATACGACGTACCAGNATTACGCTCATATGGCCATGGNAGGCCAGTGAAT
TCCACCCAAGCAGTGGTATCAACGCAGAGTGGCCATTATGGCGGGGGGAACAAAGACGAGCTCATGCAGC
ACATGGACGAGGTCAACGACGAGCTCATCCGGAAAATCAGCAACATCAGGGCGCAGCCACAGAGGCACTT
CCGCGTGGAGCGCAGCCAGCCCGTGAGCCAGCCGCTCACCTACGAGTCGGGTCCGGACGAGGTCCGCGCC
TGGCTGGAAGCCAAGGCCTTCAGCCCGCGGATCGTGGAGAACCTGGGCATCCTGACCGGGCCGCAGCTCT
TCTCCCTCAACAAGGAGGAGCTGAAGAAAGTGTGCGGCGAGGAGGGCGTCCGCGTGTACAGCCAGCTCAC
CATGCAGAAGGCCTTCCTGGAGAAGCAGCAAAGTGGGTCGGAGCTGGAAGAACTCATGAACAAGTTTCAT
TCCATGAATCAGAGGAGGGGGGAGGACAGCTAGGCCCAGCTGCCTTGGGCTGGGGCCTGCGGAGGGGAAG
CCCACCCACAATGCATGGAGTATTATTTTTATATGTGTATGTATTTTGTATCAAGGACACGGAGGGGGTG
TGGTGCTGGCTANAGTTCCCTGCCCTTGTNTGGAGGCACACNCCCATCCTTAGGCCAAACANTACCNAGG
NCTNANCCCACACCAANACTATTTTAACCNAACTNGNTGNTTGGTGGTGCCNNCCCNTTGGTGNTNCCNC
CCNTTNTCCCNTTTTTTTGNGNCCNAAAATTCNTGGGGCTGGGCNTTTTTTTTTGGCNNCCCTTNNNNCN
TNGGGGTTCTGGNCCNTNNNNTNTNCCCCTNCCCCCCNTTTTNNNTNTTN

Human GOCAP1 mRNA sequence - var1 (public gi: 10438060) (SEQ ID NO: 61)
GATACGTGGCTGCCGTCTGTCCCCGCTGAGGAGGTGCAGCAGCCGGAGATGGCGGCGGTGCTGAACGCAG
AGCGACTCGAGGTGTCCGTCGACGGCCTCACGCTCAGCCCGGACCCGGAGGAGCGGCCTGGGGCGGAGGG
CGCCCCGCTGCTGCCGCCACCGCTGCCACCGCCCTCGCCACCTGGATCCGGTCGCGGCCCGGGCGCCTCA
GGGGAGCAGCCCGAGCCCGGGGAGGCGGCGGCTGGGGGCGCGGCGGAGGAGGCGCGGCGGCTGGAGCAGC
GCTGGGGTTTCGGCCTGGAGGAGTTGTACGGCCTGGCACTGCGCTTCTTCAAAGAAAAAGATGGCAAAGC
ATTTCATCCAACTTATGAAGAAAAATTGAAGCTTGTGGCACTGCATAAGCAAGTTCTTATGGGCCCATAT
AATCCAGACACTTGTCCTGAGGTTGGATTCTTTGATGTGTTGGGGAATGACAGGAGGAGAGAATGGGCAG
CCCTGGGAAACATGTCTAAAGAGGATGCCATGGTGGAGTTTGTCAAGCTCTTAAATAGGTGTTGCCATCT
CTTTTCAACATATGTTGCGTCCCACAAAATAGAGAAGGAAGAGCAAGACAAAAAAAGGAAGGAGGAAGAG
GAGCGAAGGCGGCGTGAAGAGGAAGAAAGAGAACGTCTGCAAAAGGAGGAAGAGAAACGTAGGAGAGAAG
AAGAGGAAAGGCTTCGACGGGAGGAAGAGGAAAGGAGACGGATAGAAGAAGAAAGGCTTCGGTTGGAGCA

Figure 36 part - 32

GCAAAAGCAGCAGATAATGGCAGCTTTAAACTCCCAGACTGCCGTGCAGTTCCAGCAGTATGCAGCCCAA
CAGTATCCAGGGAACTACGAACAGCAGCAAATTCTCATCCGCCAGTTGCAGGAGCAACACTATCAGCAGT
ACATGCAGCAGTTGTATCAAGTCCAGCTTGCACAGCAACAGGCAGCATTACAGAAACAACAGGAAGTAGT
AGTGGCTGGGTCTTCCTTGCCTACATCATCAAAAGTGAATGCAACTGTACCAAGTAATATGATGTCAGTT
AATGGACAGGCCAAAACACACACTGACAGCTCCGAAAAAGAACTGGAACCAGAAGCTGCAGAAGAAGCCC
TGGAGAATGGACCAAAAGAATCTCTTCCAGTAATAGCAGCTCCATCCATGTGGACACGACCTCAGATCAA
AGACTTCAAAGAGAAGATTCAGCAGGATGCAGATTCCGTGATTACAGTGGGCCGAGGAGAAGTGGTCACT
GTTCGAGTACCCACCCATGAAGAAGGATCATATCTCTTTTGGGAATTTGCCACAGACAATTATGACATTG
GGTTTGGGGTGTATTTTGAATGGACAGACTCTCCAAACACTGCTGTCAGCGTGCATGTCAGTGAGTCCAG
CGATGACGACGAGGAGGAAGAAGAAAACATCGGTTGTGAAGAGAAAGCCAAAAAGAATGCCAACAAGCCT
TTGCTGGATGAGATTGTGCCTGTGTACCGACGGGACTGTCATGAGGAGGTGTATGCTGGCAGCCATCAAT
ATCCAGGGAGAGGAGTCTATCTCCTCAAGTTTGACAACTCCTACTCTTTGTGGCGGTCAAAATCAGTCTA
CTACAGAGTCTATTATACTAGATAAAAATGTTGTTACAAAGTCTGGAGTCTAGGGTTGGGCAGAAGATGA
CATTTAATTTGGAAATTTCTTTTTACTTTTGTGGAGCATTAGAGTCACAGTTTACCTTATTGATATTGGT
CTGATGGTTTGTGAACTCTTGCTGGGAATCAAAATTTCCTTGAGACTCTTTAGCATTCATACTTTGGGGT
TAAAGGAGATTCCTCAGACTCATCCAGCCCTTGGGTGCTGACCAGCAGAGTCACTAGTGGATGCTGAAGT
TACATGAGCTACATGTTAAATATTTAAAGTCTCCAAAATAAAACACCCCAACGTTGACCTTACCCGGCTG
ATGGTTAGCCCCTTGCTGCCTGCTCCATGTGTCTTATGAGAGCCCGTAGTTACAGTGTCCTCTAATTTGA
AATCCATAAGTTAACAAGTCTATATCAGGTGCAGCTGGCTTTGATTAAAGGCCATTTTTAAAACTTAAAA
ACTCAACACCTCACAGATTATAAAAAAAAAAAAAAAAAAA

Human GOCAP1 mRNA sequence - var2 (public gi: 15826851) (SEQ ID NO: 62)

GGAAGTCGATACGTGGCTGCCTTCTGTCCCCGCTGAGGAGGTGCAGCAGCCGGAGATGGCGGCGGTGCTG
AACGCAGAGCGACTCGAGGTGTCCGTCGACGGCCTCACGCTCAGCCCGGACCCGGAGGAGCGGCCTGGGG
CGGAGGGCGCCCCGCTGCTGCCGCCACCGCTGCCACCGCCCTCGCCACCTGGATCCGGTCGCGGCCCGGG
CGCCTCAGGGGAGCAGCCCGAGCCCGGGGAGGCGGCGGCTGGGGGCGCGGCGGAGGAGGCGCGGCGGCTG
GAGCAGCGCTGGGGTTTCGGCCTGGAGGAGTTGTACGGCCTGGCACTGCGCTTCTTCAAAGAAAAAGATG
GCAAAGCATTTCATCCAACTTATGAAGAAAAATTGAAGCTTGTGGCACTGCATAAGCAAGTTCTTATGGG
CCCATATAATCCAGACACTTGTCCTGAGGTTGGATTCTTTGATGTGTTGGGGAATGACAGGAGGAGAGAA
TGGGCAGCCCTGGGAAACATGTCTAAAGAGGATGCCATGGTGGAGTTTGTCAAGCTCTTAAATAGGTGTT
GCCATCTCTTTTCAACATATGTTGCGTCCCACAAAATAGAGAAGGAAGAGCAAGAAAAAAAAAGGAAGGA
GGAAGAGGAGCGAAGGCGGCGTGAAGAGGAAGAAAGAGAACGTCTGCAAAAGGAGGAAGAGAAACGTAGG
AGAGAAGAAGAGGAAAGGCTTCGACGGGAGGAAGAGGAAAGGAGACGGATAGAAGAAGAAAGGCTTCGGT
TGGAGCAGCAAAAGCAGCAGATAATGGCAGCTTTAAACTCCCAGACTGCCGTGCAGTTCCAGCAGTATGC
AGCCCAACAGTATCCAGGGAACTACGAACAGCAGCAAATTCTCATCCGCCAGTTGCAGGAGCAACACTAT
CAGCAGTACATGCAGCAGTTGTATCAAGTCCAGCTTGCACAGCAACAGGCAGCATTACAGAAACAACAGG
AAGTAGTAGTGGCTGGGTCTTCCTTGCCTACATCATCAAAAGTGAATGCAACTGTACCAAGTAATATGAT
GTCAGTTAATGGACAGGCCAAAACACACACTGACAGCTCCGAAAAAGAACTGGAACCAGAAGCTGCAGAA
GAAGCCCTGGAGAATGGACCAAAAGAATCTCTTCCAGTAATAGCAGCTCCATCCATGTGGACACGACCTC
AGATCAAAGACTTCAAAGAGAAGATTCAGCAGGATGCAGATTCCGTGATTACAGTGGGCCGAGGAGAAGT
GGTCACTGTTCGAGTACCCACCCATGAAGAAGGATCATATCTCTTTTGGGAATTTGCCACAGACAATTAT
GACATTGGGTTTGGGGTGTATTTTGAATGGACAGACTCTCCAAACACTGCTGTCAGCGTGCATGTCAGTG
AGTCCAGCGATGACGACGAGGAGGAAGAAGAAAACATCGGTTGTGAAGAGAAAGCCAAAAAGAATGCCAA
CAAGCCTTTGCTGGATGAGATTGTGCCTGTGTACCGACGGGACTGTCATGAGGAGGTGTATGCTGGCAGC
CATCAATATCCAGGGAGAGGAGTCTATCTCCTCAAGTTTGACAACTCCTACTCTTTGTGGCGGTCAAAAT
CAGTCTACTACAGAGTCTATTATACTAGATAAAAATGTTGTTACAAAGTCTGGAGTCTAGGGTTGGGCAG
AAGATGACATTTAATTTGGAAATTTCTTTTTACTTTTGTGGAGCATTAGAGTCACAGTTTACCTTATTGA
TATTGGTCTGATGGTTTGTGAACTCTTGCTGGGAATCAAAATTTCCTTGAGACTCTTTAGCATTCATACT
TTGGGGTTAAAGGAGATTCCTCAGACTCATCCAGCCCTTGGGTGCTGACCAGCAGAGTCACTAGTGGATG
CTGAAGTTACATGAGCTACATGTTAAATATTTAAAGTCTCCAAAATAAAACACCCCAACGTTGACCTTAC
CCGGCTGATGGTTAGCCCCTTGCTGCCTGCTCCATGTGTCTTATGAGAGCCCGTAGTTACAGTGTCCTCT
AATTTGAAATCCATAAGTTAACAAGTCTATATCAGGTGCATCTGGCTTTGATTAAAGGCCATTTTTAAAA
CTTAAAAACTCAACACCTCACAGATTATAATAGAAAAAGAAATGGCCTCAGTTTGATCTCGTTCAGAATG
ACCCAGATTGTTTCTGCTTTGGGTGCAGCTGTTTAGTTCAGAGTTATATTACAGAGAATTATTTTCTGAG
ATAATCTTAAACTAGAATGTTCAAAACTAATTGATAATTGAAGTATCAAGATACGTAGAACACCTCAGAG
ATTTTTCTTCAGGAACTTCCACAAACTTTGAATCCTTGTATCTTTATTTGGTATTCATACTACTAGTAGC
AAAATACAGGTTTTTTGTTTTGTTTTGGCTTCATAGAGTATCTCAAATTGAAACTTTTCTGCACA
AAGAATAAAATTAAGGATTTTATAAACTCAAATTGGCACCTACTGAATTAAAATACATAAAATCATTTAA
ATATAATTCAGCATATGGGAAGTAACATTGCACTAATATGGAAATCACTGCCAGAGACAGTCTATTTTCT
TTTAATTTGTTACTACTTAGTCACAAACCCCACATTATTCCAGTTTGGAATTACTTATTAAGGAGAATTG
GAAATACATATGCCCATGCTTAAATTTTATAGCTTTAATTTGTGTTATTTCTTTATTGACGGGAAGAGGT
ACATCTTTTTTTCCTTACTGAAAACCAAATATGGATTAATTGCCTCAAATTTGTATAAAGTGATTGGCTA
GTGATTCTTGTTTTCAGGAAGGGAGAGTGGTATAGATAGAAAATGACAAAGATGGCAATATACACTTAAT

Figure 36 part - 33

GTTGTTATTGTATGTTGTTACTGAAGTACTTAGATTTTTAAAATTTCAAATCCTAAATCACTTCTTGTAG
GAGGGTTTTCATTAACTGCAGTATATACAGTTCACTACATATGGGTTGTTTGAGTTTTTTGTGTGCTGTA
TTTCTTTCTGTTTTTTTAATACCTGGTTTTGTACATATCTAACTCTGTTCTCTTTTGGTTGTTCAGAAAC
TGGATTTTTTTTTTTCTTAAGCAGTGCTTAATTTGTGTTTTTTAATTTTGATTCAGAAGTAGTCCCAGC
TCATAGGTGTTCATAACTGTTACATCCAGAACATTTGTCAGGCTCTCTGTCAGCTTTTCATGTACATATG
GTATAGAAACCATGGAGTTAGGCACTTCCCTGGAATTTTTTTTTTTATGAGAAAAATACTGTATTTAAAA
TGTAAAATAAACTTTTAAAAAGCAGGCACTAATATATATTTCTTCCAGCCTTTGATTACAAATTTGTCCT
TGCACATGTTAAGATGAATTATCTCCTAAAAATATCATTGTTCTTGGGAGCAGTGTATGTTACTTTACAT
AGCAGCGGTTCCTGTCATGTGTTCATGTTCAGAAATATTTTTGGTTTTAAACTTTCTTATTGCCTTTGGC
TGTTGATTAGTACAGTACAAGTTGCGATTTCAAAAAGATCTTGAAAGTAATATATTTAATCAATTAAAAT
GTTTATCTGTAAAAAAAAAAAAAAAAA

Human GOCAP1 mRNA sequence - var3 (public gi: 15799258) (SEQ ID NO: 63)

GGAAGTCGATACGTGGCTGCCTTCTGTCCCCGCTGAGGAGGTGCAGCAGCCGGAGATGGCGGCGGTGCTG
AACGCAGAGCGACTCGAGGTGTCCGTCGACGGCCTCACGCTCAGCCCGGACCCGGAGGAGCGGCCTGGGG
CGGAGGGCGCCCCGCTGCTGCCGCCACCGCTGCCACCGCCCTCGCCACCTGGATCCGGTCGCGGCCCGGG
CGCCTCAGGGGAGCAGCCCGAGCCCGGGGAGGCGGCGGCTGGGGGCGCGGCGGAGGAGGCGCGGCGGCTG
GAGCAGCGCTGGGGTTTCGGCCTGGAGGAGTTGTACGGCCTGGCACTGCGCTTCTTCAAAGAAAAAGATG
GCAAAGCATTTCATCCAACTTATGAAGAAAAATTGAAGCTTGTGGCACTGCATAAGCAAGTTCTTATGGG
CCCATATAATCCAGACACTTGTCCTGAGGTTGGATTCTTTGATGTGTTGGGGAATGACAGGAGGAGAGAA
TGGGCAGCCCTGGGAAACATGTCTAAAGAGGATGCCATGGTGGAGTTTGTCAAGCTCTTAAATAGGTGTT
GCCATCTCTTTTCAACATATGTTGCGTCCCACAAAATAGAGAAGGAAGAGCAAGAAAAAAAAAGGAAGGA
GGAAGAGGAGCGAAGGCGGCGTGAAGAGGAAGAAAGAGAACGTCTGCAAAAGGAGGAAGAGAAACGTAGG
AGAGAAGAAGAGGAAAGGCTTCGACGGGAGGAAGAGGAAAGGAGACGGATAGAAGAAGAAAGGCTTCGGT
TGGAGCAGCAAAAGCAGCAGATAATGGCAGCTTTAAACTCCCAGACTGCCGTGCAGTTCCAGCAGTATGC
AGCCCAACAGTATCCAGGGAACTACGAACAGCAGCAAATTCTCATCCGCCAGTTGCAGGAGCAACACTAT
CAGCAGTACATGCAGCAGTTGTATCAAGTCCAGCTTGCACAGCAACAGGCAGCATTACAGAAACAACAGG
AAGTAGTAGTGGCTGGGTCTTCCTTGCCTACATCATCAAAAGTGAATGCAACTGTACCAAGTAATATGAT
GTCAGTTAATGGACAGGCCAAAACACACACTGACAGCTCCGAAAAAGAACTGGAACCAGAAGCTGCAGAA
GAAGCCCTGGAGAATGGACCAAAAGAATCTCTTCCAGTAATAGCAGCTCCATCCATGTGGACACGACCTC
AGATCAAAGACTTCAAAGAGAAGATTCAGCAGGATGCAGATTCCGTGATTACAGTGGGCCGAGGAGAAGT
GGTCACTGTTCGAGTACCCACCCATGAAGAAGGATCATATCTCTTTTGGGAATTTGCCACAGACAATTAT
GACATTGGGTTTGGGGTGTATTTTGAATGGACAGACTCTCCAAACACTGCTGTCAGCGTGCATGTCAGTG
AGTCCAGCGATGACGACGAGGAGGAAGAAAACATCGGTTGTGAAGAGAAAGCCAAAAAGAATGCCAA
CAAGCCTTTGCTGGATGAGATTGTGCCTGTGTACCGACGGGACTGTCATGAGGAGGTGTATGCTGGCAGC
CATCAATATCCAGGGAGAGGAGTCTATCTCCTCAAGTTTGACAACTCCTACTCTTTGTGGCGGTCAAAAT
CAGTCTACTACAGAGTCTATTATACTAGATAAAAATGTTGTTACAAAGTCTGGAGTCTAGGGTTGGGCAG
AAGATGACATTTAATTTGGAAATTTCTTTTTACTTTTGTGGAGCATTAGAGTCACAGTTTACCTTATTGA
TATTGGTCTGATGGTTTGTGAACTCTTGCTGGGAATCAAAATTTCCTTGAGACTCTTTAGCATTCATACT
TTGGGGTTAAAGGAGATTCCTCAGACTCATCCAGCCCTTGGGTGCTGACCAGCAGAGTCACTAGTGGATG
CTGAAGTTACATGAGCTACATGTTAAATATTTAAAGTCTCCAAAATAAAACACCCCAACGTTGACCTTAC
CCGGCTGATGGTTAGCCCCTTGCTGCCTGCTCCATGTGTCTTATGAGAGCCCGTAGTTACAGTGTCCTCT
AATTTGAAATCCATAAGTTAACAAGTCTATATCAGGTGCATCTGGCTTTGATTAAAGGCCATTTTTAAAA
CTTAAAAACTCAACACCTCACAGATTATAATAGAAAAAGAAATGGCCTCAGTTTGATCTCGTTCAGAATG
ACCCAGATTGTTTCTGCTTTGGGTGCAGCTGTTTAGTTCAGAGTTATATTACAGAGAATTATTTTCTGAG
ATAATCTTAAACTAGAATGTTCAAAACTAATTGATAATTGAAGTATCAAGATACGTAGAACACCTCAGAG
ATTTTTCTTCAGGAACTTCCACAAACTTTGAATCCTTGTATCTTTATTTGGTATTCATACTACTAGTAGC
AAAATACAGGTTTTTTGTTTTGTTTTGTTTTGGCTTCATAGAGTATCTCAAATTGAAACTTTTCTGCACA
AAGAATAAAATTAAGGATTTTATAAACTCAAATTGGCACCTACTGAATTAAAATACATAAAATCATTTAA
ATATAATTCAGCATATGGGAAGTAACATTGCACTAATATGGAAATCACTGCCAGAGACAGTCTATTTTCT
TTTAATTTGTTACTACTTAGTCACAAACCCCACATTATTCCAGTTTGGAATTACTTATTAAGGAGAATTG
GAAATACATATGCCCATGCTTAAATTTTATAGCTTTAATTTGTGTTATTTCTTTATTGACGGGAAGAGGT
ACATCTTTTTTTCCTTACTGAAAACCAAATATGGATTAATTGCCTCAAATTTGTATAAAGTGATTGGCTA
GTGATTCTTGTTTTCAGGAAGGGAGAGTGGTATAGATAGAAAATGACAAAGATGGCAATATACACTTAAT
GTTGTTATTGTATGTTGTTACTGAAGTACTTAGATTTTTAAAATTTCAAATCCTAAATCACTTCTTGTAG
GAGGGTTTTCATTAACTGCAGTATATACAGTTCACTACATATGGGTTGTTTGAGTTTTTTGTGTGCTGTA
TTTCTTTCTGTTTTTTTAATACCTGGTTTTGTACATATCTAACTCTGTTCTCTTTTGGTTGTTCAGAAAC
TGGATTTTTTTTTTTCTTAAGCAGTGCTTAATTTGTGTTTTTTAATTTTGATTCAGAAGTAGTCCCAGC
TCATAGGTGTTCATAACTGTTACATCCAGAACATTTGTCAGGCTCTCTGTCAGCTTTTCATGTACATATG
GTATAGAAACCATGGAGTTAGGCACTTCCCTGGAATTTTTTTTTTTATGAGAAAAATACTGTATTTAAAA
TGTAAAATAAACTTTTAAAAAGCAGGCACTAATATATATTTCTTCCAGCCTTTGATTACAAATTTGTCCT
TGCACATGTTAAGATGAATTATCTCCTAAAAATATCATTGTTCTTGGGAGCAGTGTATGTTACTTTACAT
AGCAGCGGTTCCTGTCATGTGTTCATGTTCAGAAATATTTTTGGTTTTAAACTTTCTTATTGCCTTTGGC

Figure 36 part - 34

TGTTGATTAGTACAGTACAAGTTGCGATTTCAAAAAGATCTTGAAAGTAATATATTTAATCAATTAAAAT
GTTTATCTGTAAAAAAAAAAAAAAAAA

Human GOCAP1 mRNA sequence - var4 (public gi: 21961496) (SEQ ID NO: 64)

CGGACGCGTGGGTGCCATCTCTTTTCAACATATGTTGCGTCCCACAAAATAGAGAAGGAAGAGCAAGAAA
AAAAAAGGAAGGAGGAAGAGGAGCGAAGGCGGCGTGAAGAGGAAGAAAGAGAACGTCTGCAAAAGGAGGA
AGAGAAACGTAGGAGAGAAGAAGAGGAAAGGCTTCGACGGGAGGAAGAGGAAAGGAGACGGATAGAAGAA
GAAAGGCTTCGGTTGGAGCAGCAAAAGCAGCAGATAATGGCAGCTTTAAACTCCCAGACTGCCGTGCAGT
TCCAGCAGTATGCAGCCCAACAGTATCCAGGGAACTACGAACAGCAGCAAATTCTCATCCGCCAGTTGCA
GGAGCAACACTATCAGCAGTACATGCAGCAGTTGTATCAAGTCCAGCTTGCACAGCAACAGGCAGCATTA
CAGAAACAACAGGAAGTAGTAGTGGCTGGGTCTTCCTTGCCTACATCATCAAAAGTGAATGCAACTGTAC
CAAGTAATATGATGTCAGTTAATGGACAGGCCAAAACACACACTGACAGCTCCGAAAAAGAACTGGAACC
AGAAGCTGCAGAAGAAGCCCTGGAGAATGGACCAAAAGAATCTCTTCCAGTAATAGCAGCTCCATCCATG
TGGACACGACCTCAGATCAAAGACTTCAAAGAGAAGATTCAGCAGGATGCAGATTCCGTGATTACAGTGG
GCCGAGGAGAAGTGGTCACTGTTCGAGTACCCACCCATGAAGAAGGATCATATCTCTTTTGGGAATTTGC
CACAGACAATTATGACATTGGGTTTGGGGTGTATTTTGAATGGACAGACTCTCCAAACACTGCTGTCAGC
GTGCATGTCAGTGAGTCCAGCGATGACGACGAGGAGGAAGAAGAAAACATCGGTTGTGAAGAGAAAGCCA
AAAAGAATGCCAACAAGCCTTTGCTGGATGAGATTGTGCCTGTGTACCGACGGGACTGTCATGAGGAGGT
GTATGCTGGCAGCCATCAATATCCAGGGAGAGGAGTCTATCTCCTCAAGTTTGACAACTCCTACTCTTTG
TGGCGGTCAAAATCAGTCTACTACAGAGTCTATTATACTAGATAAAAATGTTGTTACAAAGTCTGGAGTC
TAGGGTTGGGCAGAAGATGACATTTAATTTGGAAATTTCTTTTTACTTTTGTGGAGCATTAGAGTCACAG
TTTACCTTATTGATATTGGTCTGATGGTTTGTGAACTCTTGCTGGGAATCAAAATTTCCTTGAGACTCTT
TAGCATTCATACTTTGGGGTTAAAGGAGATTCCTCAGACTCATCCAGCCCTTGGGTGCTGACCAGCAGAG
TCACTAGTGGATGCTGAAGTTACATGAGCTACATGTTAAATATTTAAAGTCTCCAAAATAAAACACCCCA
ACGTTGACCTTACCCGGCTGATGGTTAGCCCCTTGCTGCCTGCTCCATGTGTCTTATGAGAGCCCGTAGT
TACAGTGTCCTCTAATTTGAAATCCATAAGTTAACAAGTCTATATCAGGTGCAGCTGGCTTTGATTAAAG
GCCATTTTTAAAACTTAAAAACTCAACACCTCACAGATTATAATAGAAAAAGAAATGGCCTCAGTTTGAT
CTCGTTCAGAATGACCCAGATTGTTTCTGCTTTGGGTGCAGCTGTTTAGTTCAGAGTTATATTACAGAGA
ATTATTTTCTGAGATAATCTTAAACTAGAATGTTCAAAACTAATTGATAATTGAAGTATCAAGATACGTA
GAACACCTCAGAGATTTTTCTTCAGGAACTTCCACAAACTTTGAATCCTTGTATCTTTATTTGGTATTCA
TACTACTAGTAGCAAAATACAGGTTTTTTGTTTTGTTTTGTTTTGTTTTGGCTTCATAGAGTATCTCAAA
TTGAAACTTTTCTGCACAAAGAATAAAATTAAGGATTTTATAAACTCAAATTGGCACCTACTGAATTAAA
ATACATAAAATCATTTAAATATAATTCAGCATATGGGAAGTAACATTGCACTAATATGGAAATCACTGCC
AGAGACAGTCTATTTTCTTTTAATTTGTTACTACTTAGTCACAAACCCCACATTATTCCAGTTTGGAATT
ACTTATTAAGGAGAATTGGAAATACATATGCCCATGCTTAAATTTTATAGCTTTAATTTGTGTTATTTCT
TTATTGACGGGAAGAGGTACATCTTTTTTTCCTTACTGAAAACAAATATGGATTAATTGCCTCAAATTTG
TATAAGTGATTGGCTAGTGATTCTTGTTTTCAGAAGGGAGAGTGGTATAGATAGAAAATGACAAAGATGG
CAATATACACTTAATGTTGTTATTGTATGTTGTTACTGAAGTACTTAGATTTTTAAAATTTCAAATCCTA
AATCACTTCTTGTAGGAGGGTTTTCATTAACTGCAGTATATACAGTTCACTACATATGGGTTGTTTGAGT
TTTTTGTGTGCTGTATTTCTTTCTGTTTTTTAATACCTGGTTTTGTACATATCTAACTCTGTTCTCTTTT
GGTTGTTCAGAAACTGGATTTTTTTTTTTTCTTAAGCAGTGCTTAATTTGTGTTTTTTAATTTTGATTCAG
AAGTAGTCCCAGCTCATAGGTGTTCATACTGTTACATCCAGAACATTTGTCAGGCTCTCTGTCAGCTTTC
ATGTACATATGGTATAGAAACCATGGAGTTAGGCACTTCCTGGATTTTTTTTTTATGAGAAAAATACTGT
ATTTAAAATGTAAAATAAACTTTTAAAAAGCAGGCACTAATATATATTTCTTCCAGCCTTTGATTACAAA
TTTGTCCTTGCACATGTTAAGATGAATTATCTCCTAAAAATATCATTGTTCTTGGGAGCAGTGTATGTTA
CTTTACATAGCAGCGGTTCCTGTCATGTGTTCATGTCAGAGTATTTTTGGTTTTAAACTTTCTTATTGCC
TTTGGCTGTTGATTAGTACAGTACAAGTGCGATTTCAAAAAGATCTTGAAAGTAATATATTTAATCAATT
AAAATGTTTATCTGTAAAAAAAAAAAAAAAAAAAAAAAA

Human GOCAP1 mRNA sequence - var5 (public gi: 24496472) (SEQ ID NO: 65)

CCGCTGAGGAGGTGCAGCAGCCGGAGATGGCGGCGGTGCTGAACGCAGAGCGACTCGAGGTGTCCGTCGA
CGGCCTCACGCTCAGCCCGGACCCGGAGGAGCGGCCTGGGGCGGAGGGCGCCCCGCTGCTGCCGCCACCG
CTGCCACCGCCCTCGCCACCTGGATCCGGTCGCGGCCCGGGCGCCTCAGGGGAGCAGCCCGAGCCCGGGG
AGGCGGCGGCTGGGGGCGCGGCGGAGGAGGCGCGGCGGCTGGAGCAGCGCTGGGGTTTCGGCCTGGAGGA
GTTGTACGGCCTGGCACTGCGCCTCTTCAAAGAAAAAGATGGCAAAGCATTTCATCCAACTTATGAAGAA
AAATTGAAGCTTGTGGCACTGCATAAGCAAGTTCTTATGGGCCCATATAATCCAGACACTTGTCCTGAGG
TTGGATTCTTTGATGTGTTGGGGAATGACAGGAGGAGAGAATGGGCAGCCCTGGGAAACATGTCTAAAGA
GGATGCCATGGTGGAGTTTGTCAAGCTCTTAAATAGGTGTTGCCATCTCTTTTCAACATATGTTGCGTCC
CACAAAATAGAGAAGGAAGAGCAAGACAAAAAAAGGAAGGAGGAAGAGGAGCGAAGGCGGCGTGAAGAGG
AAGAAAGAGAGCGTCTGCAAAAGGAGGAAGAGAAACGTAGGAGAGAAGAAGAGGAAAGGCTTCGACGGGA
GGAAGAGGAAAGGATACGGATAGAAGAAGAAAGGCTTCGGTTGGAGCAGCAAAAGCAGCAGATAATGGCA
GCTTTAAACTCCCAGACTGCCGTGCAGTTCCAGCAGTATGCAGCCCAACGGTATCCAGGGAACTACGAAC

AGCAGCAAATTCTCATCCGCCAGTTGCAGGAGCAACACTATCAGCAGTACATGCAGCAGTTGTATCAAGT
CCAGCTTGCACAGCAACAGGCAGCATTACAGAAACAACAGGAAGTAGTAGTGGCTGGGTCTTCCTTGCCT
ACATCATCAAAAGTGAATGCAACTGTACCAAGTAATATGATGCCAGTTAATGGACAGGCCAAAACACACA
CTGACAGCTCCGAAAAAGAACTGGAACCAGAAGCTGCAGAAGAAGCCCTGGAGAATGGACCAAAAGAATC
TCTTCCAGTAATAGCAGCTCCATCCATGTGGACACGACCTCAGATCAAAGACTTTCAAAGAGAAGATTCA
GCAGGATGCAGATTCCGTGATTACAGTGGCCGAGGAGAAGTGGTCACTGTTCGAGTACCCACCCATGAAG
AAGGATCATATCTCTTTTGGGAATTTGCCACAGACAATTGTGACATTGGGTTTGGGGTGTATTTTGAATG
GACAGACTCTCCAAACACTGCTGTCAGCGTGCATGTCAGTGAGTCCAGCGATGACGACGAGGAGGAAGAA
GAAAACATCGGTTGTGAAGAGAAAGCCAAAAAGAATGCCAACAAGCCTTTGCTGGATGAGATTGTGCCTG
TGTACCGACGGGACTGTCATGAGGAGGTGTATGCTGGCAGCCATCAATATCCAGGGAGAGGAGTCTATCT
CCTCAAGTTTGACAACTCCTACTCTTTGTGGCGGTCAAAATCAGTCTACTACAGAGTCTATTATACTAGA
TAAAAATGTTGTTACAAAGTCTGGAGTCTAGGGTTGGGCAGAAGATGACATTTAATTTGGAAATTTCTTT
TTACTTTTGTGGAGCATTAGAGTCACAGTTTACCTTATTGATATTGGTCTGATGGTTTGTGAACTCTTGC
TGGGAATCAAAATTTCCTTGAGACTCTTTAGCATTCATACTTTGGGGTTAAAGGAGATTCCTCAGACTCA
TCCAGCCCTTGGGTGCTGACCAGCAGAGTCACTAGGGGATGCTGAAGTTACATGAGCTACATGTTAAATA
TTTAAAGTCTCCAAAATAAAACACCCCAACGTTGACCTTACCCGGCTGATGGTTAGCCCCTTGCTGCCTG
CTCCATGTGTCTTATGAGAGCCCGTAGTTACAGTGTCCTCTAATTTGAAATCCATAAGTTAACAAGTCTA
TATCAGGTGCAGCTGGCTTTGATTAAAGGCCATTTTTAAAACTTAAAAACTCAACACCTCACAGATTATA
ATAGAAAAAGAAATGGCCTCAGCTTGATCTCGTTCAGAATGACCCAGATTGTTTCTGCCTTGGGTGCAGC
TGTTTAGTTCAGAGTTATATTACAGAGAATTATTTTCTGAGATAATCTTAAACTAGAATGTTCAAAACTA
ATTGATAATTGAAGTATCAAGATACGTAGAACACCTCAGAGATTTTTCTTCAGGAACTTCCACAAACTTT
GAATCCTTGTATCTTTATTTGGTATTCATACTACTAGTAGCAAAATACAGGTTTTTTGTTTTGTTTTGTT
TTGTTTTGGCTTCATAGAGTATCTCAAATTGAAACTTTTCTGCACAAAGAATAAAATTAAGGATTTTATA
AACTCGAATTGGCACCTACTGAATTAAAATACATAAAATCATTTAAATATAATTCAGCATATGGGAAGTA
ACATTGCACTAATATGGAAATCACTGCCAGAGACAGTCTATTTTCTTTTAATTTGTTACTACTTAGTCAC
AACCCCACATTATTCCAGTTTGGAATTACTTATTAAGGAGAATTGGAAATACATGTGCCCATGCTTAAAT
TTTATAGCTTTAATTTGTGTTATTTCTTTATTGACGGGAAGAGGTACATCTTTTTTTCCTTACTGAAAAC
AAATATGGATTAATTGCCTCAAATTTGTATAAAGTGATTGGCTAGTGATTCTTGTTTTCAGAGGGGAGAG
TGGTATAGATAGAAAATGACGAAGATGGCAATATACACTTAATGTTGTTATTGTATGTTGTTACTGAAGA
CTTAGATTTTTAAAATTTCAAATCCTAAATCACTTCTTGTAGGGGGGTTTTCATTAACTGCAGTATATAC
AGTTCACTACATATGGGTTGTTTGAGTTTTTTGTGTGCTGTATTTCTTTCTGTTTTTTAATACCTGGTTT
TGTACATATCTAACTCTGTTCTCTTTTGGTTGTTCAGAAACTGGATTTTTTTCTTCTTAAGCAGTGCTTA
ATTTGTGTTTTTTAATTTTGATTCAGAAGTAGTCCCAGCTCATAGGCGTTCATACTGTTACATCCAGAAC
ATTTGTCAGGCTCTCTGTCAGCTTTCATGTACATATGGTATAGAAACCATGGAGTTAGGCACTTCCTGGA
TTTTTTTTATGAGAAAAATNCTGTATTTAAAATGTAAAATAAACTTTTAAAAAGCAGGCACTAATATATA
TTTCTTCCAGCCTTTGATTACAAATTTGTCCTTGCACATGTTAAGATGAATTATCTCCTAAAAATATCAT
TGTTCTTGGGAGCAGTGTATGTTACTTTACATAGCAGCGGTTCCTGTCATGTGTTCATGTCACGAATATT
TTTGGTTTTAAACTTTCTTATTGCCTTTGGCTGTTGATTAGTACAGTACAAGTGCGATTTCAAAAAGATC
TTGAAAGTAATATATTTAATCAATTAAAATGTTTATCTGGAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AA

Human GOCAP1 mRNA sequence - var6 (public gi: 28374435) (SEQ ID NO: 66)

TCCGTCCCCGCTGAGGAGGTGCAGCAGCGGGAGATGGCGGCGGTGCTGAACGCAGAGCGACTCGAGGTGT
CCGTCGACGGCCTCACGCTCAGCCCGGACCCGGAGGAGCGGCCTGGGGCGGAGGGCGCCCCGCTGCTGCC
GCCACCGCTGCCACCGCCCTCGCCACCTGGATCCGGTCGCGGCCCGGGCGCCTCAGGGGAGCAGCCCGAG
CCCGGGGAGGCGGCGGCTGGGGGCGCGGCGGAGGAGGCGCGGCGGCTGGAGCAGCGCTGGGGTTTCGGCC
TGGAGGAGTTGTACGGCCTGGCACTGCGCTTCTTCAAAGAAAAAGATGGCAAAGCATTTCATCCAACTTA
TGAAGAAAAATTGAAGCTTGTGGCACTGCATAAGCAAGTTCTTATGGGCCCATATAATCCAGACACTTGT
CCTGAGGTTGGATTCTTTGATGTGTTGGGGAATGACAGGAGGAGAGAATGGGCAGCCCTGGGAAACATGT
CTAAAGAGGATGCCATGGTGGAGTTTGTCAAGCTCTTAAATAGGTGTTGCCATCTCTTTTCAACATATGT
TGCGTCCCACAAAATAGAGAAGGAAGAGCAAGAAAAAAAAAGGAAGGAGGAAGAGGAGCGAAGGCGGCGT
GAAGAGGAAGAAAGAGAACGTCTGCAAAAGGAGGAAGAGAAACGTAGGAGAGAAGAAGAGGAAAGGCTTC
GACGGGAGGAAGAGGAAAGGAGACGGATAGAAGAAGAAAGGCTTCGGTTGGAGCAGCAAAAGCAGCAGAT
AATGGCAGCTTTAAACTCCCAGACTGCCGTGCAGTTCCAGCAGTATGCAGCCCAACAGTATCCAGGGAAC
TACGAACAGCAGCAAATTCTCATCCGCCAGTTGCAGGAGCAACACTATCAGCAGTACATGCAGCAGTTGT
ATCAAGTCCAGCTTGCACAGCAACAGGCAGCATTACAGAAACAACAGGAAGTAGTAGTGGCTGGGTCTTC
CTTGCCTACATCATCAAAAGTGAATGCAACTGTACCAAGTAATATGATGTCAGTTAATGGACAGGCCAAA
ACACACACTGACAGCTCCGAAAAAGAACTGGAACCGGAAGCTGCAGAAGAAGCCCTGGAGAATGGACCAA
AAGAATCTCTTCCAGTAATAGCAGCTCCATCCATGTGGACACGACCTCAGATCAAAGACTTCAAAGAGAA
GATTCAGCAGGATGCAGATTCCGTGATTACAGTGGGCCGAGGAGAAGTGGTCACTGTTCGAGTACCCACC
CATGAAGAAGGATCATATCTCTTTTGGGAATTTGCCACAGACAATTATGACATTGGGTTTGGGGTGTATT
TTGAATGGACAGACTCTCCAAACACTGCTGTCAGCGTGCATGTCAGTGAGTCCAGCGATGACGACGAGGA
GGAAGAAGAAAACATCGGTTGTGAAGAGAAAGCCAAAAAGAATGCCAACAAGCCTTTGCTGGATGAGATT

Figure 36 part - 36

GTGCCTGTGTACCGACGGGACTGTCATGAGGAGGTGTATGCTGGCAGCCATCAATATCCAGGGAGAGGAG
TCTATCTCCTCAAGTTTGACAACTCCTACTCTTTGTGGCGGTCAAAATCAGTCTACTACAGAGTCTATTA
TACTAGATAAAAATGTTGTTACAAAGTCTGGAGTCTAGGGTTGGGCAGAAGATGACATTTAATTTGGAAA
TTTCTTTTTACTTTTGTGGAGCATTAGAGTCACAGTTTACCTTATTGATATTGGTCTGATGGTTTGTGAA
CTCTTGCTGGGAATCAAAATTTCCTTGAGACTCTTTAGCATTCATACTTTGGGGTTAAAGGAGATTCCTC
AGACTCATCCAGCCCTTGGGTGCTGACCAGCAGAGTCACTAGTGGATGCTGAAGTTACATGAGCTACATG
TTAAATATTTAAAGTCTCCAAAATAAAACACCCCAACGTTGACCTTACCCGGCTGATGGTTAGCCCCTTG
CTGCCTGCTCCATGTGTCTTATGAGAGCCCGTAGTTACAGTGTCCTCTAATTTGAAATCCATAAGTTAAC
AAGTCTATATCAGGTGCAGCTGGCTTTGATTAAAGGCCATTTTTAAAACTTAAAAACTCAACACCTCACA
GATTATAATAGAAAAAGAAATGGCCTCAGTTTGATCTCGTTCAGAATGACCCAGATTGTTTCTGCTTTGG
GTGCAGCTGTTTAGTTCAGAGTTATATTACAGAGAATTATTTTCTGAGATAATCTTAAACTAGAATGTTC
AAAACTAATTGATAATTGAAGTATCAAGATACGTAGAACACCTCAGAGATTTTTCTTCAGGAACTTCCAC
AAACTTTGAATCCTTGTATCTTTATTTGGTATTCATACTACTAGTAGCAAAATACAGGTTTTTTGTTTTG
TTTTGTTTTGGCTTCATAGAGTATCTCAAATTGAAACTTTTCTGCACAAAGAATAAAATTAAGGATTTTA
TAAACTCAAATTGGCACCTACTGAATTAAAATACATAAAATCATTTAAATATAATTCAGCATATGGGAAG
TAACATTGCACTAATATGGAAATCACTGCCAGAGACAGTCTATTTTCTTTTAATTTGTTACTACTTAGTC
ACAAACCCCACATTATTCCAGTTTGGAATTACTTATTAAGGAGAATTGGAAATACATATGCCCATGCTTA
AATTTTATAGCTTTAATTTGTGTTATTTCTTTATTGACGGGAAGAGGTACATCTTTTTTTCCTTACTGAA
AACAAATATGGATTAATTGCCTCAAATTTGTATAAGTGATTGGCTAGTGATTCTTGTTTTCAGAAGGGAG
AGTGGTATAGATAGAAAATGACAAAGATGGCAATATACACTTAATGTTGTTATTGTATGTTGTTACTGAA
GTACTTAGATTTTTAAAATTTCAAATCCTAAATCACTTCTTGTAGGAGGGTTTTCATTAACTGCAGTATA
TACAGTTCACTACATATGGGTTGTTTGAGTTTTTTGTGTGCTGTATTTCTTTCTGTTTTTTAATACCTGG
TTTTGTACATATCTAACTCTGTTCTCTTTTGGTTGTTCAGAAACTGGATTTTTTTTTCTTAAGCAGTGCT
TAATTTGTGTTTTTTAATTTTGATTCAGAAGTAGTCCCAGCTCATAGGTGTTCATACTGTTACATCCAGA
ACATTTGTCAGGCTCTCTGTCAGCTTTCATGTACATATGGTATAGAAACCATGGAGTTAGGCACTTCCTG
GATTTTTTTTTTTTATGAGAAAAATACTGTATTTAAAATGTAAAATAAACTTTTAAAAAGCAGGCACTAAT
ATATATTTCTTCCAGCCTTTGATTACAAATTTGTCCTTGCACATGTTAAGATGAATTATCTCCTAAAAAT
ATCATTGTTCTTGGGAGCAGTGTATGTTACTTTACATAGCAGCGGTTCCTGTCATGTGTTCATGTCAGAA
TATTTTTGGTTTTAAACTTTCTTATTGCCTTTGGCTGTTGATTAGTACAGTACAAGTGCGATTTCAAAAA
GATCTTGAAAGTAATATATTTAATCAATTAAAATGTTTATCTGTCAAAAAAAAAAAAAAA

Human GOCAP1 mRNA sequence - var7 (public gi: 25058702) (SEQ ID NO: 67)

CGCTGAGGAGGTGCAGCAGCCGGAGATGGCGGCGGTGCTGAACGCAGAGCGACTCGAGGTGTCCGTCGAC
GGCCTCACGCTCAGCCCGGACCCGGAGGAGCGGCCTGGGGCGGAGGGCGCCCCGCTGCTGCCGCCACCGC
TGCCACCGCCCTCGCCACCTGGATCCGGTCGCGGCCCGGGCGCCTCAGGGGAGCAGCCCGAGCCCGGGGA
GGCGGCGGCTGGGGGCGCGGCGGAGGAGGCGCGGCGGCTGGAGCAGCGCTGGGGTTTCGGCCTGGAGGAG
TTGTACGGCCTGGCACTGCGCTTCTTCAAAGAAAAAGATGGCAAAGCATTTCATCCAACTTATGAAGAAA
AATTGAAGCTTGTGGCACTGCATAAGCAAGTTCTTATGGGCCCATATAATCCAGACACTTGTCCTGAGGT
TGGATTCTTTGATGTGTTGGGGAATGACAGGAGGAGAGAATGGGCAGCCCTGGGAAACATGTCTAAAGAG
GATGCCATGGTGGAGTTTGTCAAGCTCTTAAATAGGTGTTGCCATCTCTTTTCAACATATGTTGCGTCCC
ACAAAATAGAGAAGGAAGAGCAAGAAAAAAAAAAAGGAAGGAGGAAGAGGAGCGAAGGCGGCGTGAAGAGG
AAGAAAGAGAACGTCTGCAAAAGGAGGAAGAGAAACGTAGGAGAGAAGAAGAGGAAAGGCTTCGACGGGA
GGAAGAGGAAAGGAGACGGATAGAAGAAGAAAGGCTTCGGTTGGAGCAGCAAAAGCAGCAGATAATGGCA
GCTTTAAACTCCCAGACTGCCGTGCAGTTCCAGCAGTATGCAGCCCAACAGTATCCAGGGAACTACGAAC
AGCAGCAAATTCTCATCCGCCAGTTGCAGGAGCAACACTATCAGCAGTACATGCAGCAGTTGTATCAAGT
CCAGCTTGCACAGCAACAGGCAGCATTACAGAAACAACAGGAAGTAGTAGTGGCTGGGTCTTCCTTGCCT
ACATCATCAAAAGTGAATGCAACTGTACCAAGTAATATGATGTCAGTTAATGGACAGGCCAAAACACACA
CTGACAGCTCCGAAAAAGAACTGGAACCAGAAGCTGCAGAAGAAGCCCTGGAGAATGGACCAAAAGAATC
TCTTCCAGTAATAGCAGCTCCATCCATGTGGACACGACCTCAGATCAAAGACTTCAAAGAGAAGATTCAG
CAGGATGCAGATTCCGTGATTACAGTGGGCCGAGGAGAAGTGGTCACTGTTCGAGTACCCACCCATGAAG
AAGGATCATATCTCTTTTGGGAATTTGCCACAGACAATTATGACATTGGGTTTGGGGTGTATTTTGAATG
GACAGACTCTCCAAACACTGCTGTCAGCGTGCATGTCAGTGAGTCCAGCGATGACGACGAGGAGGAAGAA
GAAAACATCGGTTGTGAAGAGAAAGCCAAAAAGAATGCCAACAAGCCTTTGCTGGATGAGATTGTGCCTG
TGTACCGACGGGACTGTCATGAGGAGGTGTATGCTGGCAGCCATCAATATCCAGGGAGAGGAGTCTATCT
CCTCAAGTTTGACAACTCCTACTCTTTGTGGCGGTCAAAATCAGTCTACTACAGAGTCTATTATACTAGA
TAAAAATGTTGTTACAAAGTCTGGAGTCTAGGGTTGGGCAGAAGATGACATTTAATTTGGAAATTTCTTT
TTACTTTTGTGGAGCATTAGAGTCACAGTTTACCTTATTGATATTGGTCTGATGGTTTGTGAACTCTTGC
TGGGAATCAAAATTTCCTTGAGACTCTTTAGCATTCATACTTTGGGGTTAAAGGAGATTCCTCAGACTCA
TCCAGCCCTTGGGTGCTGACCAGCAGAGTCACTAGTGGATGCTGAAGTTACATGAGCTACATGTTAAATA
TTTAAAGTCTCCAAAATAAAACACCCCAACGTTGACCTTAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

Figure 36 part - 37

Human GOCAP1 mRNA sequence - var8 (public gi: 2738926) (SEQ ID NO: 68)

GAATTCCGTTGCTGTCGGAGCCCGTAGTTACAGTGTCCTCTAATTTGAAATCCATAAGTTACCAAGTCTA
TATCAGGTACAGCTGGCTTTCATTAAAGGCCATTTTTAAAACTTCAAAAACTCAACACCTCACAGATTAT
AATAGAAAAAGAAATGGCCTCAGTTTGATCTCGTTCAGAATGACCCAGATTGTTTTCTGCTTTGGGTGCA
GCTGTTTAGTTCAGAGTTATATTACAGAGAATTATTTTCTGAGAAATCTTAAAACTAGAATGTTCAAAAC
TAATTCGATAATTGAAGTATCAAGATACGTAGAACACCTCAGAGATTTTTCTTCAGGAACTTCCACAAAC
TTTAGAATCCTTGTATCTTTATTTGGTATTCATACTACTAGTCGCAAAATACAGGTTTTTTGTTTTGTTT
TGTTTTGTTTTGGCTTCATAGAGTATCTCAAATTGAAACTTTTCTGCCCAAAGAATAAAATTAAGGATTT
TATAAAACTCAAATTGGCACCTACTGAATTAAAATACATAAAATGCATTAAATATAATTCAGCATATGGC
AGTAACATTGCACTAATATGGAAATCACTGCCAGAGACAGTCTATTTTCTTTTAATTTGTTACTACTTAG
TCACAACCCCACATTATTCCAGTTTGGAATTACTTATTAAGGAGAATTGGAAATACATATGCCCATGCTT
AAATTTTATAGCTTTAATTTGTGTTATTTCTTTATTGACGGGAAGAGGTACATCTTTTTTTCCTTACTCA
AAACAAATATGGATTAATTGCCTCAAATTTGTATAAGTGATTGGCTAGTGATTCTTGTTTTCAGAGGGAG
AGTGGTATAGATAGAAAATGACAAAGATGGCAATATACACTTAATGTTGTTATTGTATGTTGTTACTGAA
GTACTTAGATTTTTAAAATTTCAAATCCTAAATCACTTCTTGTAGGAGGGTTTTCATTAACTGCAGATAT
ACAGTTCACTACATATGGGTTGTTTGAGTTTTTTGTGTGCTGTATTTCTTTCTGTTTTTTAATACCTGGT
TTTGTACATATCTAACTCTGTTCTCTTTTGGTTGTTCAGAAACTGGATTTTTTTTTTCTTAAGCAGTGCT
TAATTTGTGTTTTTTAATTTTGATTCAGAAGTAGTCCCAGCTCATAGGTGTTCATACTGTTACATCCAGA
ACATTTGTCAGGCTCTCTGTCAGCTTTCATGTACATATGGTATAGAAACCATGGAGTTAGGCACTTCCTG
GATTTTTTTTTTATGAGAAAAATACTGTATTTAAAATGTAAAATAAACTTTTAAAAAGC

Human GOCAP1 Protein sequence - var1 (public gi: 24496473) (SEQ ID NO: 240)

MAAVLNAERLEVSVDGLTLSPDPEERPGAEGAPLLPPPLPPPSPPGSGRGPGASGEQPEPGEAAAGGAAE
EARRLEQRWGFGLEELYGLALRLFKEKDGKAFHPTYEEKLKLVALHKQVLMGPYNPDTCPEVGFFDVLGN
DRRREWAALGNMSKEDAMVEFVKLLNRCCHLFSTYVASHKIEKEEQDKKRKEEEERRRREEEERERLQKE
EEKRRREEEERLRREEEERIRIEEERLRLEQQKQQIMAALNSQTAVQFQQYAAQRYPGNYEQQQILIRQL
QEQHYQQYMQQLYQVQLAQQQAALQKQQEVVVAGSSLPTSSKVNATVPSNMMPVNGQAKTHTDSSEKELE
PEAAEEALENGPKESLPVIAAPSMWTRPQIKDFQREDSAGCRFRDYSGRGEVVTVRVPTHEEGSYLFWEF
ATDNCDIGFGVYFEWTDSPNTAVSVHVSESSDDDEEEEENIGCEEKAKKNANKPLLDEIVPVYRRDCHEE
VYAGSHQYPGRGVYLLKFDNSYSLWRSKSVYYRVYYTR

Human GOCAP1 Protein sequence - var2 (public gi: 21961497) (SEQ ID NO: 241)

RTRGCHLFSTYVASHKIEKEEQEKKRKEEEERRRREEEERERLQKEEEKRRREEEERLRREEEERRRIEE
ERLRLEQQKQQIMAALNSQTAVQFQQYAAQQYPGNYEQQQILIRQLQEQHYQQYMQQLYQVQLAQQQAAL
QKQQEVVVAGSSLPTSSKVNATVPSNMMSVNGQAKTHTDSSEKELEPEAAEEALENGPKESLPVIAAPSM
WTRPQIKDFKEKIQQDADSVITVGRGEVVTVRVPTHEEGSYLFWEFATDNYDIGFGVYFEWTDSPNTAVS
VHVSESSDDDEEEEENIGCEEKAKKNANKPLLDEIVPVYRRDCHEEVYAGSHQYPGRGVYLLKFDNSYSL
WRSKSVYYRVYYTR

Human GOCAP1 Protein sequence - var3 (public gi: 15799259) (SEQ ID NO: 242)

MAAVLNAERLEVSVDGLTLSPDPEERPGAEGAPLLPPPLPPPSPPGSGRGPGASGEQPEPGEAAAGGAAE
EARRLEQRWGFGLEELYGLALRFFKEKDGKAFHPTYEEKLKLVALHKQVLMGPYNPDTCPEVGFFDVLGN
DRRREWAALGNMSKEDAMVEFVKLLNRCCHLFSTYVASHKIEKEEQEKKRKEEEERRRREEEERERLQKE
EEKRRREEEERLRREEEERRRIEEERLRLEQQKQQIMAALNSQTAVQFQQYAAQQYPGNYEQQQILIRQL
QEQHYQQYMQQLYQVQLAQQQAALQKQQEVVVAGSSLPTSSKVNATVPSNMMSVNGQAKTHTDSSEKELE
PEAAEEALENGPKESLPVIAAPSMWTRPQIKDFKEKIQQDADSVITVGRGEVVTVRVPTHEEGSYLFWEF
ATDNYDIGFGVYFEWTDSPNTAVSVHVSESSDDDEEEEENIGCEEKAKKNANKPLLDEIVPVYRRDCHEE
VYAGSHQYPGRGVYLLKFDNSYSLWRSKSVYYRVYYTR

Human GOCAP1 Protein sequence - var4 (public gi: 10438061) (SEQ ID NO: 243)

MAAVLNAERLEVSVDGLTLSPDPEERPGAEGAPLLPPPLPPPSPPGSGRGPGASGEQPEPGEAAAGGAAE
EARRLEQRWGFGLEELYGLALRFFKEKDGKAFHPTYEEKLKLVALHKQVLMGPYNPDTCPEVGFFDVLGN
DRRREWAALGNMSKEDAMVEFVKLLNRCCHLFSTYVASHKIEKEEQDKKRKEEEERRRREEEERERLQKE
EEKRRREEEERLRREEEERRRIEEERLRLEQQKQQIMAALNSQTAVQFQQYAAQQYPGNYEQQQILIRQL
QEQHYQQYMQQLYQVQLAQQQAALQKQQEVVVAGSSLPTSSKVNATVPSNMMSVNGQAKTHTDSSEKELE
PEAAEEALENGPKESLPVIAAPSMWTRPQIKDFKEKIQQDADSVITVGRGEVVTVRVPTHEEGSYLFWEF
ATDNYDIGFGVYFEWTDSPNTAVSVHVSESSDDDEEEEENIGCEEKAKKNANKPLLDEIVPVYRRDCHEE
VYAGSHQYPGRGVYLLKFDNSYSLWRSKSVYYRVYYTR

Figure 36 part - 38

Unigene Name: GOSR2 Unigene ID: Hs.432552

Human GOSR2 mRNA sequence - var1 (public gi: 2316087) (SEQ ID NO: 69)
ATGGATCCCCTGTTCCAGCAAACGCACAAGCAGGTCCACGAGATCCAGTCTTGCATGGGACGCCTGGAGA
CGGCAGACAAGCAGTCTGTGCACATAGTAGAAAACGAAATCCAAGCAAGCATAGACCAGATATTCAGCCG
TCTAGAACGTCTGGAGATTTTGTCCAGCAAGGAGCCCCCTAACAAAAGGCAAAATGCCAGACTTCGGGTT
GACCAGTTAAAGTATGATGTCCAGCACCTGCAGACTGCGCTCAGAAACTTCCAGCATCGGCGCCATGCAA
GGGAGCAGCAGGAGAGACAGCGAGAAGAGCTTCTGTGTCGAACGTTCACCACTAACGGCTCTGACACCAC
CATACCAATGGACGAATCACTGCAGTTTAACTCCTCCCTCCAGAAAGTTCACAACGGCATGGATGACCTC
ATTTTAGATGGGCACAATATTTTAGATGGACTGAGGACCCAGAGACTGACCTTGAAGGGGACTCAGAAGA
AGATCCCTGACATTGCCAACATGCTGGGCTTGTCCAACACAGTGATGCGGCTCATCGAGAAGCGGGCTTT
CCAGGACAAGTACTTTATGATAGGTGGGATGCTGCTGACCTGTGTGGTCATGTTCCTCGTGGTGCAGTAC

Human GOSR2 mRNA sequence - var2 (public gi: 3483524) (SEQ ID NO: 70)
TTTTTTTTTTCAGGACAGATTGGCCTTTATACTAAATTCCACAATATACCTGGTATTAGTACAGCCTGAA
TCCGGGGCTGGTCACAGAAGGAAAAAGGTTGTAGTCCCTGAAAACAGAGTGTTACAAGGACATACACACT
ACAGATGTCTCCACGGTGGGATCTGCCCACACTGGCTGGGCAAAATGAGGGCCTGGCTGGCAGGTGCTAA
TATATTTCAGGGAAGAGAAGGGAACCAAAGAATTAGAGATACTAAAACTAGAGCTGAGACTGTAATTGGA
AAATCACAAATCTTTGCCTACAGCTACTTTCTAAGGGGCAAAGGCCCACAAAGCCTGGGCGCAGGTGCCA
AGCCACAGTCTCTGAACCTTAAAAGCCAACCACTCTATTAACAACTAGAAAAAATCAGTGACTAGGGTCA
AGACTGAACACTCCCGGGAAATAACACTGGCCTCACTTTAGAAAAGAGAAACACCCAGCTGTAGTGTGGA
AAATCTTACTTGTTATCGGCAATAGCACTACATCTTGTTTCCCCTAGGTAGCTGCTTCCAGGGAATGGTG
ACAAGTATTGGCAGTCAGTCATCTACATGTCACTGAGGCACAGGGGAGGGTGGCCAGGAGCACGAGGATG
TGAATCGACCTACTATTTAATATAATGGCTGTGAGAAAAGGCCTCTTTCCTTTCCTTTCCACTTTTGCTC
CACCCTATCAGGAG

Human GOSR2 mRNA sequence - var3 (public gi: 21961348) (SEQ ID NO: 71)
GGCCTGCCGGGCCGGCGACATGGATCCCCTGTTCCAGCAAACGCACAAGCAGGTCCACGAGATCCAGTCT
TGCATGGGACGCCTGGAGACGGCAGACAAGCAGTCTGTGCACATAGTAGAAAACGAAATCCAAGCAAGCA
TAGACCAGATATTCAGCCGTCTAGAACGTCTGGAGATTTTGTCCAGCAAGGAGCCCCCTAACAAAAGGCA
AAATGCCAGACTTCGGGTTGACCAGTTAAAGTATGATGTCCAGCACCTGCAGACTGCGCTCAGAAACTTC
CAGCATCGGCGCCATGCAAGGGAGCAGCAGGAGAGACAGCGAGAAGAGCTTCTGTCTCGAACCTTCACCA
CTAACGACTCTGACACCACCATACCAATGGACGAATCACTGCAGTTTAACTCCTCCCTCCAGAAAGTTCA
CAACGGCATGGATGACCTCATTTTAGATGGGCACAATATTTTAGATGGACTGAGGACCCAGAGACTGACC
TTGAAGGTGGGGTCCCTGCTGGGGGACAGAGAGAAGGCCTCTTGTTTTAGCCTCATCCAACAGTTTAGTA
ACTGTGTTTATATTTTGATTACGTGTCCTCAAATTGTGATATTTTGATGACAAGACAGAGCCCTTGAGTT
TGGGATCCTTTCTGTTGGAGTTGAGTTATTGTGAGCCTGAAAGTACCCAGTTCCTTTGCCAGTGCTTGAA
ACAAACCATGAAGTGGCCTCTCTTAGGATCCAGGTCTTTTCCCATTTACTGAACTTATCATGAAAGTGAG
TGCTACTACGAGGGGTCCAATCACAGGCTGAGAAATTGTGTTACAGAATCTACTCTTGGAAGAATGAAGA
CGTGGCTGTCCTTTGGTACCTCGCTTTAAGGTGGCTTTCCCTTAGGACCCCTACTGTGGACTGCCTTATA
ACTAAAACCTTTTGTATTTTAGTAACTGAATCCCCACTGTGCAGTGTTAGGGCTGCCTGGTTGTTTGCAG
TAGATTAGAGCTTTAGAAGCTTCTAGAGCTTCTAAAGCCCGTGCTGGTGATCCCAGCGACTCTTCACTCC
CTAGCCTTAGGTATTCCTAGAAGCCCTGACCAGTTGGCACTGCTGAGACTCCAGCCCCTGGGAGTGGTTT
ACAGAAACATTACACAGACTCTGATGTCAGTCATGATGTTTCAGCCTCTGCCCTTTTCCTGTATCAACCC
TGATGGATAATAGGGCGTGGGTTCTGTCTGTTATCAGGGTGTGGTCCCCTGTGAATGAAGCACTCCCAGC
CACTGAGCTGTGAGAAACAGTCACTCGGAAGTGTGAGCTTTATCTTAGTTTTTGTTGGATCATGTTGAGT
CTGTCAGCTCCACAGGACTTCAGTACGTTTCTGAACAGTCCCTGCCATCTCTACGGGGGAGAGGGTCAGG
CAAGCTGCAAGTGACACTCACCTCCTGCTGACAGTTGCAGTGTCTCAGATGGCCTGGAAGGGTGGTCTCC
AGCAGCCTGCTGGGCGCTCCCCTTTCATGAGAGCCACCTGCAGTGACCTGAACTGATACATGTTGATTAG
TCTGCCCTTTCTTTAGAAAACTGCTACTCTCCTTTTCATATCTCAGAAAAACAGTAGAGGCCTTTTAGGA
CCAAACTCCATGTCACACTGATGAAGAGCCAGTGGGGGTTAGAGCGTCCTGTTAAGGCACATGCTAGCTT
CCCACTCAAGTCTGGCAGCGCTGGGGCATCAGCACACCTCTTGCCACCCACACTGATACCAGAGGGGAAG
GCTGTGAGGTGGCTGGGGGTTGAGACTTGAGGTTTCTAACTTTCCTCTGCACACCTGTGGCTACCTGGTG
TTTGTCTCTTGATTCCCTCCACCTGCCTCACACCCTGCCTCCGTCGGGATTTTCCACCTACACCATTCAA
AAGGAACATAGGAGAGGGCATGAAGGGGCTAGGCTGAAGCACTCTGATGACTGGGGCCAATTTGTGGCTG
AAAATGAATACATTTTTTGAAATTTATGGTCATTTTCAAGTGATTTAGAAGGTTGATCCTTAGCCTCATA
CAGTGATGAAATAATCTGTGTGTTCAGAGCCAAGCAGGACTTTAGCAAGAGTCTGATTGTATTGTCACTA
TCTCGGGGAAAAAAAAAATACAAATACATTTCTCTGATCTCTGATGGCAATGAAGTTTGACTTGTAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

Figure 36 part - 39

Human GOSR2 mRNA sequence - var4 (public gi: 16905519) (SEQ ID NO: 72)
GTTCCGAGGAAGCCAGAGCCGGAGCCGTGGCCTGCCGGGCCGGCGACATGGATCCCCTGTTCCAGCAAAC
GCACAAGCAGGTCCACGAGATCCAGTCTTGCATGGGACGCCTGGAGACGGCAGACAAGCAGTCTGTGCAC
ATAGTAGAAAACGAAATCCAAGCAAGCATAGACCAGATATTCAGCCGTCTAGAACGTCTGGAGATTTTGT
CCAGCAAGGAGCCCCCTAACAAAAGGCAAAATGCCAGACTTCGGGTTGACCAGTTAAAGTATGATGTCCA
GCACCTGCAGACTGCGCTCAGAAACTTCCAGCATCGGCGCCATGCAAGGGAGCAGCAGGAGAGACAGCGA
GAAGAGCTTCTGTCTCGAACCTTCACCACTAACGACTCTGACACCACCATACCAATGGACGAATCACTGC
AGTTTAACTCCTCCCTCCAGAAAGTTCACAACGGCATGGATGACCTCATTTTAGATGGGCACAATATTTT
AGATGGACTGAGGACCCAGAGACTGACCTTGAAGGGGACTCAGAAGAAGATCCTTGACATTGCCAACATG
CTGGGCTTGTCCAACACAGTGATGCGGCTCATCGAGAAGCGGGCTTTCCAGGACAAGTACTTTATGATAG
GCACCCAAGGATCCTGCCAGACAGCACACTTTGGAGGAAGGTCTGCAGGGAGCAGCTGAGCCATTTGTTC
TTGAACTCTGGGAGGCAGAAGTCCCCGCACCCATCATGCGTGGACTGATAGGACATCTTTTCGTGGTGTG
CACCAGTGCTTTCCACACTTGACAGTGGTTGGCTTTGATGAACCCTCATGCTGCACCTTCAGAGCCAGTC
CTCTAGTTTGGAATAAAAATTGCAGAGGTGGAAAAAAAAAAAAAAAAAAA

Human GOSR2 mRNA sequence - var5 (public gi: 12711466) (SEQ ID NO: 73)
AGCCGGAGCCGTGGCCTGCGGGGCCGGCGACATGGATCCCCTGTTCCAGCAAACGCACAAGCAGGTCCAC
GAGATCCAGTCTTGCATGGGACGCCTGGAGACGGCAGACAAGCAGTCTGTGCACATAGTAGAAAACGAAA
TCCAAGCAAGCATAGACCAGATATTCAGCCGTCTAGAACGTCTGGAGATTTTGTCCAGCAAGGAGCCCCC
TAACAAAAGGCAAAATGCCAGACTTCGGGTTGACCAGTTAAAGTATGATGTCCAGCACCTGCAGACTGCG
CTCAGAAACTTCCAGCATCGGCGCCATGCAAGGGAGCAGCAGGAGAGACAGCGAGAAGAGCTTCTGTCTC
GAACCTTCACCACTAACGACTCTGACACCACCATACCAATGGACGAATCACTGCAGTTTAACTCCTCCCT
CCAGAAAGTTCACAACGGCATGGATGACCTCATTTTAGATGGGCACAATATTTTAGATGGACTGAGGACC
CAGAGACTGACCTTGAAGGGGACTCAGAAGAAGATCCTTGACATTGCCAACATGCTGGGCTTGTCCAACA
CAGTGATGCGGCTCATCGAGAAGCGGGCTTTCCAGGACAAGTACTTTATGATAGGCACCCAAGGATCCTG
CCAGACAGCACACTTTGGAGGAAGGTCTGCAGGGAGCAGCTGAGCCATTTGTTCTTGAACTCTGGGAGGC
AGAAGTCCCCGCACCCATCATGCGTGGACTGATAGGACATCTTTTCGTGGTGTGCACCAGTGCTTTCCAC
ACTTGACAGTGGTTGGCTTTGATGAACCCTCATGCTGCACCTTCAGAGCCAGTCCTCTAGTTTGGAATAA
AAATTGCAGAGGTGGAAAAAAAAAAAAAAAAAAA

Human GOSR2 mRNA sequence - var6 (public gi: 37805253) (SEQ ID NO: 74)
CAATAGAGACAAGGTCTTGCTCTGTCACCCAGGTTGGAGTACAGTGGCATGATCTTGATTCACTACAACC
TCTACCTCTTGGGTTCAAGCGATCCTCCCACCTCGGTCTTCTGAGTAGCTGGGAATACAGTTATAATTAT
TCAATATGTTCCCACTGACTGAGGAAAACAAGCATGTGGCCCAGTTGTTGCTCAATACTGGTACTTGTCC
AAGATGTATCTTCAGATTCTGTGGTGTGGATTTTCATGCACCTTACAAACTTCCATACAAGATGAAGAAA
CTGAGATACAGAGAGGTTAAGCAACCTCCCAAAGTTCTAGGGTTACAGGTGTTAGCCACTGTACCTGGCC
TCTAAGGTGATTCTGATGTGTGTATTTTGGAACCACTGTCTCCTAGACAGAAAGCTTCTGTCTCAAAGAT
GATCACATTGGTGTAAAGAGCAAAACTTGTTAAGTCCAAAATAAATTCTTACTGTTTATATCCTAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

Human GOSR2 mRNA sequence - var7 (public gi: 16905521) (SEQ ID NO: 75)
GTTCCGAGGAAGCCAGAGCCGGAGCCGTGGCCTGCCGGGCCGGCGACATGGATCCCCTGTTCCAGCAAAC
GCACAAGCAGGTCCACGAGATCCAGTCTTGCATGGGACGCCTGGAGACGGCAGACAAGCAGTCTGTGCAC
ATAGTAGAAAACGAAATCCAAGCAAGCATAGACCAGATATTCAGCCGTCTAGAACGTCTGGAGATTTTGT
CCAGCAAGGAGCCCCCTAACAAAAGGCAAAATGCCAGACTTCGGGTTGACCAGTTAAAGTATGATGTCCA
GCACCTGCAGACTGCGCTCAGAAACTTCCAGCATCGGCGCCATGCAAGGGAGCAGCAGGAGAGACAGCGA
GAAGAGCTTCTGTCTCGAACCTTCACCACTAACGACTCTGACACCACCATACCAATGGACGAATCACTGC
AGTTTAACTCCTCCCTCCAGAAAGTTCACAACGGCATGGATGACCTCATTTTAGATGGGCACAATATTTT
AGATGGACTGAGGACCCAGAGACTGACCTTGAAGGGGACTCAGAAGAAGATCCTTGACATTGCCAACATG
CTGGGCTTGTCCAACACAGTGATGCGGCTCATCGAGAAGCGGGCTTTCCAGGACAAGTACTTTATGATAG
GTGGGATGCTGCTGACCTGTGTGGTCATGTTCCTCGTGGTGCAGTACCTGACATGAGCCAGCCACGCTCA
GTGGCTGAACAGCATTCCCACAGCCTGCAAGTGTGTGTGTGTGTGAAAGAGAGAGGGGGGCCCAGAGGCC
GCCTTTTGAAATGTTTGCCTGTCTGAACTGTGAAGACACTTGGGAGTGATTGTGGTCTAATTTCCAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

Human GOSR2 protein sequence - var1 (public gi: 16307241) (SEQ ID NO: 244)
MDPLFQQTHKQVHEIQSCMGRLETADKQSVHIVENEIQASIDQIFSRLERLEILSSKEPPNKRQNARLRV
DQLKYDVQHLQTALRNFQHRRHAREQQERQREELLSRTFTTNDSDTTIPMDESLQFNSSLQKVHNGMDDL
ILDGHNILDGLRTQRLTLKGTQKKILDIANMLGLSNTVMRLIEKRAFQDKYFMIGGMLLTCVVMFLVVQY
LT

Figure 36 part - 40

Human GOSR2 protein sequence - var2 (public gi: 16905522) (SEQ ID NO: 245)
MDPLFQQTHKQVHEIQSCMGRLETADKQSVHIVENEIQASIDQIFSRLERLEILSSKEPPNKRQNARLRV
DQLKYDVQHLQTALRNFQHRRHAREQQERQREELLSRTFTTNDSDTTIPMDESLQFNSSLQKVHNGMDDL
ILDGHNILDGLRTQRLTLKGTQKKILDIANMLGLSNTVMRLIEKRAFQDKYFMIGGMLLTCVVMFLVVQY
LT

Human GOSR2 protein sequence - var3 (public gi: 12711467) (SEQ ID NO: 246)
MDPLFQQTHKQVHEIQSCMGRLETADKQSVHIVENEIQASIDQIFSRLERLEILSSKEPPNKRQNARLRV
DQLKYDVQHLQTALRNFQHRRHAREQQERQREELLSRTFTTNDSDTTIPMDESLQFNSSLQKVHNGMDDL
ILDGHNILDGLRTQRLTLKGTQKKILDIANMLGLSNTVMRLIEKRAFQDKYFMIGTQGSCQTAHFGGRSA
GSS

Human GOSR2 protein sequence - var4 (public gi: 21961349) (SEQ ID NO: 247)
MDPLFQQTHKQVHEIQSCMGRLETADKQSVHIVENEIQASIDQIFSRLERLEILSSKEPPNKRQNARLRV
DQLKYDVQHLQTALRNFQHRRHAREQQERQREELLSRTFTTNDSDTTIPMDESLQFNSSLQKVHNGMDDL
ILDGHNILDGLRTQRLTLKVGSLLGDREKASCFSLIQQFSNCVYILITCPQIVIF

Human GOSR2 protein sequence - var5 (public gi: 2316088) (SEQ ID NO: 248)
MDPLFQQTHKQVHEIQSCMGRLETADKQSVHIVENEIQASIDQIFSRLERLEILSSKEPPNKRQNARLRV
DQLKYDVQHLQTALRNFQHRRHAREQQERQREELLCRTFTTNGSDTTIPMDESLQFNSSLQKVHNGMDDL
ILDGHNILDGLRTQRLTLKGTQKKIPDIANMLGLSNTVMRLIEKRAFQDKYFMIGGMLLTCVVMFLVVQY
LT

Human GOSR2 pray sequence - var1 (SEQ ID NO: 76)
AGCGCCGCCATGGNAGTACCCATNCGACGTACCAGATTACGCTCATATGGCCATGGAGGCCAGTGAATTC
CACCCAAGCAGTGGTATCAACGCAGAGTGGCCATTATGGCCGGAAACCGGAAGGGGGGCTGTGAGGACGT
GTTCCGAGGAAGCCAGACCCGGAGCCGTGGCCTGCCGGGCCGGCGACATGGATCCCCTGTTCCAGCAAAC
GCACAAGCAGGTCCACGAGATCCAGTCTTGCATGGGACGCCTGGAGACGGCAGACAAGCAGTCTGTGCAC
ATAGTAGAAAACGAAATCCAAGCAAGCATAGACCAGATATTCAGCCGTCTAGGACGTCTGGAGATTTTGT
CCAGCAAGGAGCCCCCTAACAAAAGGCAAAATGCCAAACTTCGGGTTGACCAGTTAAAGTATGATGTCCA
GCACCTGCAGACTGCGCTCAGAAACTTCCAGCATCGGCGCNATGCAAGGGAGCAGCGGGAGAGACAGCGA
GAAGANCTTNTGTCTCNAACCTTAACCNNTACCAANTTTGACNCCCCCTTNCCATTGACCAAATANTNGN
NGTTAACNTNCCTCCCNCNAAAAAGTTACAAACGGCTTGNNNAACNTANTTTAAAAGGGNCCNATTTTTT
TNAATNGCNTTGGGNNCCCAAAACCTTCCTTTNGNGGGGGGGNCCNTTTGGGGGGAAAAAAAAAANGCCC
TTTTTTTTANCCCCNNNNCAANNTTNAAANACNGNNNNTTNTTTTTNAANCNGNNCCCCAAAGAGGGGAN
TTTTNNNAAANAAAAACNCCCCCCTNTGGGGGGGCCTTNTTTTGGGGNGGANNTTTTTGNNCCANNAAAA
ACCCCNTTTTNTNNGGNNGGAAAAAAAAAAAAAGNNNNTNTTTNTA

Human HERPUD1 mRNA sequence - var1 (public gi: 16507801) (SEQ ID NO: 77)
AGAGACGTGAACGGTCGTTGCAGAGATTGCGGGCGGCTGAGACGCCGCCTGCCTGGCACCTAGGAGCGCA
GCGGAGCCCCGACACCGCCGCCGCCGCCATGGAGTCCGAGACCGAACCCGAGCCCGTCACGCTCCTGGTG
AAGAGCCCCAACCAGCGCCACCGCGACTTGGAGCTGAGTGGCGACCGCGGCTGGAGTGTGGGCCACCTCA
AGGCCCACCTGAGCCGCGTCTACCCCGAGCGTCCGCGTCCAGAGGACCAGAGGTTAATTTATTCTGGGAA
GCTGTTGTTGGATCACCAATGTCTCAGGGACTTGCTTCCAAAGGAAAAACGGCATGTTTTGCATCTGGTG
TGCAATGTGAAGAGTCCTTCAAAAATGCCAGAAATCAACGCCAAGGTGGCTGAATCCACAGAGGAGCCTG
CTGGTTCTAATCGGGGACAGTATCCTGAGGATTCCTCAAGTGATGGTTTAAGGCAAAGGGAAGTTCTTCG
GAACCTTTCTTCCCCTGGATGGGAAAACATCTCAAGGCATCACGTTGGGTGGTTTCCATTTAGACCGAGG
CCGGTTCAGAACTTCCCAAATGATGGTCCTCCTCCTGACGTTGTAAATCAGGACCCCAACAATAACTTAC
AGGAAGGCACTGATCCTGAAACTGAAGACCCCAACCACCTCCCTCCAGACAGGGATGTACTAGATGGCGA
GCAGACCAGCCCCTCCTTTATGAGCACAGCATGGCTTGTCTTCAAGACTTTCTTTGCCTCTCTTCTTCCA
GAAGGCCCCCCAGCCATCGCAAACTGATGGTGTTTGTGCTGTAGCTGTTGGAGGCTTTGACAGGAATGGA
CTGGATCACCTGACTCCAGCTAGATTGCCTCTCCTGGACATGGCAATGATGAGTTTTTAAAAAACAGTGT
GGATGATGATATGCTTTTGTGAGCAAGCAAAAGCAGAAACGTGAAGCCGTGATACAAATTGGTGAACAAA
AAATGCCCAAGGCTTCTCATGTCTTTATTCTGAAGAGCTTTAATATATACTCTATGTAGTTTAATAAGCA
CTGTACGTAGAAGGCCTTAGGTGTTGCATGTCTATGCTTGAGGAACTTTTCCAAATGTGTGTGTCTGCAT
GTGTGTTTGTACATAGAAGTCATAGATGCAGAAGTGGTTCTGCTGGTACGATTTGATTCCTGTTGGAATG
TTTAAATTACACTAAGTGTACTACTTTATATAATCAATGAAATTGCTAGACATGTTTTAGCAGGACTTTT
CTAGGAAAGACTTATGTATAATTGCTTTTTAAAATGCAGTGCTTTACTTTAAACTAAGGGGAACTTTGCG
GAGGTGAAAACCTTTGCTGGGTTTTCTGTTCAATAAAGTTTTACTATGAATGACCCTGAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

Figure 36 part - 41

Human HERPUD1 mRNA sequence - var2 (public gi: 10441910) (SEQ ID NO: 78)

GCTGTGTGGCCCAGGCTTTTCTCAAACTCCTGAGGGCAAGCGATCCTCCCACCTCAGCCTCCTGAGTAGC
TGGGACTACAGGCATGTGCCACTAGACCTGGCTCTAAAGACATATATGACACACGAAACCATTTATTTTT
CATTTCACAATGTTTATTCACATATATGGTATTAGTATTCTAATGTAGTGATGCACTCTAAATTTGCATT
ATATTTCCTAGAACATCTGAACAGAGCATAGGAAATTCCCTATTTTGCCATTATCAGTTCTAACAAAAAT
CTTAAAAGCACTTTATCATTTCATTTCCCTGCACTGTAATTTTTTTAAATGATCAAAAACAGTATCATAC
CAAGGCTTACTTATATTGGAATACTATTTTAGAAAGTTGTGGGCTGGGTTGTATTTATAAATCTTGTTGG
TCAGATGTCTGCAATGAGTAAATTTAGCACCATTATCAGGAAGCTTTCTCACCAATGACAACTTCATTGG
AAGATTTTAATGAAAGTGTAGCATACTCTAGGGAAAAAATATGAATATTTTAGCATCTATGTATTGAAAA
TTATGTTGAATAAATGTCAGACTATTTTTTACATAACGTTGCTTCTGTTTAATTTTGTCACGTTCAGAGG
TGGGGGGTAGGAGATGTAAGCCCTTGACAGCAAAATAATTCCTTTTGCTTGATTTCAGACAGTTGCATCA
GCTCCTTTGTTCTGTGTTCATGTTACACTTATTTAGGTGGCTGAATCCACAGAGGAGCCTGCTGGTTCTA
ATCGGGGACAGTATCCTGAGGATTCCTCAAGTGATGGTTTAAGGCAAAGGGAAGTTCTTCGGAACCTTTC
TTCCCCTGGATGGGAAAACATCTCAAGGCCTGAAGCTGCCCAGCAGGCATTCCAAGGCCTGGGTCCTGGT
TTCTCCGGTTACACACCCTATGGGTGGCTTCAGCTTTCCTGGTTCCAGCAGATATATGCACGACAGTACT
ACATGCAATATTTAGCAGCCACTGCTGCATCAGGGGCTTTTGTTCCACCACCAAGTGCACAAGAGATACC
TGTGGTCTCTGCACCTGCTCCAGCCCCTATTCACAACCAGTTTCCAGCTGAAAACCAGCCTGCCAATCAG
AATGCTGCTCCTCAAGTGGTTGTTAATCCTGGAGCCAATCAAAATTTGCGGATGAATGCACAAGGTGGCC
CTATTGTGGAAGAAGATGATGAAATAAATCGAGATTGGTTGGATTGGACCTATTCAGCAGCTACATTTTC
TGTTTTTCTCAGTATCCTCTACTTCTACTCCTCCCTGAGCAGATTCCTCATGGTCATGGGGGCCACCGTT
GTTATGTACCTGCATCACGTTGGGTGGTTTCCATTTAGACCGAGGCCGGTTCAGAACTTCCCAAATGATG
GTCCTCCTCCTGACGTTGTAAATCAGGACCCCAACAATAACTTACAGGAAGGCACTGATCCTGAAACTGA
AGACCCCAACCACCTCCCTCCAGACAGGGATGTACTAGATGGCGAGCAGACCAGCCCCTCCTTTATGAGC
ACAGCATGGCTTGTCTTCAAGACTTTCTTTGCCTCTCTTCTTCCAGAAGGCCCCCCAGCCATCGCAAACT
GATGGTGTTTGTGCTGTAGCTGTTGGAGGCTTTGACAGGAATGGACTGGATCACCTGACTCCAGCTAGAT
TGCCTCTCCTGGACATGGCAATGATGAGTTTTTAAAAAACAGTGTGGATGATGATATGCTTTTGTGAGCA
AGCAAAAGCAGAAACGTGAAGCCGTGATACAAATTGGTGAACAAAAAATGCCCAAGGCTTCTCATGTCTT
TATTCTGAAGAGCTTTAATATATACTCTATGTAGTTTAATAAGCACTGTACGTAGAAGGCCTTAGGTGTT
GCATGTCTATGCTTGAGGAACTTTTCCAAATGTGTGTGTCTGCATGTGTGTTTGTACATAGAAGTCATAG
ATGCAGAAGTGGTTCTGCTGGTACGATTTGATTCCTGTTGGAATGTTTAAATTACACTAAGTGTACTACT
TTATATAATCAATGAAATTGCTAGACATGTTTTAGCAGGACTTTTCTAGGAAAGACTTATGTATAATTGC
TTTTTAAAATGCAGTGCTTTACTTTAAACTAAGGGGAACTTTGCGGAGGTGAAAACCTTTGCTGGGTTTT
CTGTTCAATAAAGTTTTACTATGAATGACAAAAAAAAAAAAAAAAA

Human HERPUD1 mRNA sequence - var3 (public gi: 3005722) (SEQ ID NO: 79)

GGCCACCTCAAGGCCCACCTGAGCCGCGTCTACCCCGAGCGTCCGCGTCCAGAGGACCAGAGGTTAATTT
ATTCTGGGAAGCTGTTGTTGGATCACCAATGTCTCAGGGACTTGCTTCCAAAGGAAAAACGGCATGTTTT
GCATCTGGTGTGCAATGTGAAGAGTCCTTCAAAAATGCCAGAAATCAACGCCAAGGTGGCTGAATCCACA
GAGGAGCCTGCTGGTTCTAATCGGGGACAGTATCCTGAGGATTCCTCAAGTGATGGTTTAAGGCAAAGGG
AAGTTCTTCGGAACCTTTCTTCCCCTGGATGGGAAAACATCTCAAGGCCTGAAGCTGCCCAGCAGGCATT
CCAAGGCCTGGGTCCTGGTTTCTCCGGTTACACACCCTATGGGTGGCTTCAGCTTTCCTGGTTCCAGCAG
ATATATGCACGACAGTACTACATGCAATATTTAGCAGCCACTGCTGCATCAGGGGCTTTTGTTCCACCAC
CAAGTGCACAAGAGATACCTGTGGTCTCTGCACCTGCTCCAGCCCCTATTCACAACCAGTTTCCAGCTGA
AAACCAGCCTGCCAATCAGAATGCTGCTCCTCAAGTGGTTGTTAATCCTGGAGCCAATCAAAATTTGCGG
ATGAATGCACAAGGTGGCCCTATTGTGGAAGAAGATGATGAAATAAATCGAGATTGGTTGGATTGGACCT
ATTCAGCAGCTACATTTTCTGTTTTTCTCAGTATCCTCTACTTCTACTCCTCCCTGAGCAGATTCCTCAT
GGTCATGGGGGCCACCGTTGTTATGTACCTGCATCACGTTGGGTGGTTTCCATTTAGACCGAGGCCGGTT
CAGAACTTCCCAAATGATGGTCCTCCTCCTGACGTTGTAAATCAGGACCCCAACAATAACTTACAGGAAG
GCACTGATCCTGAAACTGAAGACCCCAACCACCTCCCTCCAGACAGGGATGTACTAGATGGCGAGCAGAC
CAGCCCCTCCTTTATGAGCACAGCATGGCTTGTCTTCAAGACTTTCTTTGCCTCTCTTCTTCCAGAAGGC
CCCCCAGCCATCGCAAACTGATGGTGTTTGTGCTGTAGCTGTTGGAGGCTTTGACAGGAATGGACTGGAT
CACCTGACTCCAGCTAGATTGCCTCTCCTGGACATGGCAATGATGAGTTTTTAAAAAACAGTGTGGATGA
TGATATGCTTTTGTGAGCAAGCAAAAGCAGAAACGTGAAGCCGTGATACAAATTGGTGAACAAAAAATGC
CCAAGGCTTCTCATGTCTTTATTCTGAAGAGCTTTAATATATACTCTATGTAGTTTAATAAGCACTGTAC
GTAGAAGGCCTTAGGTGTTGCATGTCTATGCTTGAGGAACTTTTCCAAATGTGTGTGTCTGCATGTGTGT
TTGTACATAGAAGTCATAGATGCAGAAGTGGTTCTGCTGGTACGATTTGATTCCTGTTGGAATGTTTAAA
TTACACTAAGTGTACTACTTTATATAATCAATGAAATTGCTAGACATGTTTTAGCAGGACTTTTCTAGGA
AAGACTTATGTATAATTGCTTTTTAAAATGCAGTGCTTTACTTTAAACTAAGGGGAACTTTGCGGAGGTG
AAAACCTTTGCTGGGTTTTCTGTTCAATAAAGTTTTACTATGAATGACCCTGAAAAAAAAAAAAAAAAAA
AAAA

Figure 36 part - 42

Human HERPUD1 mRNA sequence - var4 (public gi: 21619176) (SEQ ID NO: 80)

CCACGCGTCCGGGTCGTTGCAGAGATTGCGGGCGGCTGAGACGCCGCCTGCCTGGCACCTAGGAGCGCAG
CGGAGCCCCGACACCGCCGCCCGCCGCCATGGAGTCCGAGACCGAACCCGAGCCCGTCACGCTCCTGGTGA
AGAGCCCCAACCAGCGCCACCGCGACTTGGAGCTGAGTGGCGACCGCGGCTGGAGTGTGGGCCACCTCAA
GGCCCACCTGAGCCGCGTCTACCCCGAGCGTCCGCGTCCAGAGGACCAGAGGTTAATTTATTCTGGGAAG
CTGTTGTTGGATCACCAATGTCTCAGGGACTTGCTTCCAAAGCAGGAAAAACGGCATGTTTTGCATCTGG
TGTGCAATGTGAAGAGTCCTTCAAAAATGCCAGAAATCAACGCCAAGGTGGCTGAATCCACAGAGGAGCC
TGCTGGTTCTAATCGGGGACAGTATCCTGAGGATTCCTCAAGTGATGGTTTAAGGCAAAGGGAAGTTCTT
CGGAACCTTTCTTCCCCTGGATGGGAAAACATCTCAAGGCCTGAAGCTGCCCAGCAGGCATTCCAAGGCC
TGGGTCCTGGTTTCTCCGGTTACACACCCTATGGGTGGCTTCAGCTTTCCTGGTTCCAGCAGATATATGC
ACGACAGTACTACATGCAATATTTAGCAGCCACTGCTGCATCAGGGGCTTTTGTTCCACCACCAAGTGCA
CAAGAGATACCTGTGGTCTCTGCACCTGCTCCAGCCCCTATTCACAACCAGTTTCCAGCTGAAAACCAGC
CTGCCAATCAGAATGCTGCTCCTCAAGTGGTTGTTAATCCTGGAGCCAATCAAAATTTGCGGATGAATGC
ACAAGGTGGCCCTATTGTGGAAGAAGATGATGAAATAAATCGAGATTGGTTGGATTGGACCTATTCAGCA
GCTACATTTTCTGTTTTTCTCAGTATCCTCTACTTCTACTCCTCCCTGAGCAGATTCCTCATGGTCATGG
GGGCCACCGTTGTTATGTACCTGCATCACGTTGGGTGGTTTCCATTTAGACCGAGGCCGGTTCAGAACTT
CCCAAATGATGGTCCTCCTCCTGACGTTGTAAATCAGGACCCCAACAATAACTTACAGGAAGGCACTGAT
CCTGAAACTGAAGACCCCAACCACCTCCCTCCAGACAGGGATGTACTAGATGGCGAGCAGACCAGCCCCT
CCTTTATGAGCACAGCATGGCTTGTCTTCAAGACTTTCTTTGCCTCTCTTCTTCCAGAAGGCCCCCCAGC
CATCGCAAACTGATGGTGTTTGTGCTGTAGCTGTTGGAGGCTTTGACAGGAATGGACTGGATCACCTGAC
TCCAGCTAGATTGCCTCTCCTGGACATGGCAATGATGAGTTTTTAAAAAACAGTGTGGATGATGATATGC
TTTTGTGAGCAAGCAAAGCAGAAACGTGAAGCCGTGATACAAATTGGTGAACAAAAAATGCCCAAGGCTT
CTCATGTCTTTATTCTGAAGAGCTTTAATATATACTCTATGTAGTTTAATAAGCACTGTACGTAGAAGGC
CTTAGGTGTTGCATGTCTATGCTTGAGGAACTTTTCCAAATGTGTGTGTCTGCATGTGTGTTTGTACATA
GAAGTCATAGATGCAGAAGTGGTTCTGCTGGTACGATTTGATTCCTGTTGGAATGTTTAAATTACACTAA
GTGTACTACTTTATATAATCAATGAAATTGCTAGACATGTTTTAGCAGGACTTTTCTAGGAAAGACTTAT
GTATAATTGCTTTTTAAAATGCAGTGCTTTACTTTAAACTAAGGGGAACTTTGCGGAGGTGAAAACCTTT
GCTGGGTTTTCTGTTCAATAAAGTTTTACTATGAATGACCCTGAAAAAAAAAAAAAAA

Human HERPUD1 mRNA sequence - var5 (public gi: 14249882) (SEQ ID NO: 81)

AACGGTCGTTGCAGAGATTGCGGGCGGCTGAGACGCCGCCTGCCTGGCACCTAGGAGCGCAGCGGAGCCC
CGACACCGCCGCCGCCGCCATGGAGTCCGAGACCGAACCCGAGCCCGTCACGCTCCTGGTGAAGAGCCCC
AACCAGCGCCACCGCGACTTGGAGCTGAGTGGCGACCGCGGCTGGAGTGTGGGCCACCTCAAGGCCCACC
TGAGCCGCGTCTACCCCGAGCGTCCGCGTCCAGAGGACCAGAGGTTAATTTATTCTGGGAAGCTGTTGTT
GGATCACCAATGTCTCAGGGACTTGCTTCCAAAGCAGGAAAAACGGCATGTTTTGCATCTGGTGTGCAAT
GTGAAGAGTCCTTCAAAAATGCCAGAAATCAACGCCAAGGTGGCTGAATCCACAGAGGAGCCTGCTGGTT
CTAATCGGGGACAGTATCCTGAGGATTCCTCAAGTGATGGTTTAAGGCAAAGGGAAGTTCTTCGGAACCT
TTCTTCCCCTGGATGGGAAAACATCTCAAGGCCTGAAGCTGCCCAGCAGGCATTCCAAGGCCTGGGTCCT
GGTTTCTCCGGTTACACACCCTATGGGTGGCTTCAGCTTTCCTGGTTCCAGCAGATATATGCACGACAGT
ACTACATGCAATATTTAGCAGCCACTGCTGCATCAGGGGCTTTTGTTCCACCACCAAGTGCACAAGAGAT
ACCTGTGGTCTCTGCACCTGCTCCAGCCCCTATTCACAACCAGTTTCCAGCTGAAAACCAGCCTGCCAAT
CAGAATGCTGCTCCTCAAGTGGTTGTTAATCCTGGAGCCAATCAAAATTTGCGGATGAATGCACAAGGTG
GCCCTATTGTGGAAGAAGATGATGAAATAAATCGAGATTGGTTGGATTGGACCTATTCAGCAGCTACATT
TTCTGTTTTTCTCAGTATCCTCTACTTCTACTCCTCCCTGAGCAGATTCCTCATGGTCATGGGGGCCACC
GTTGTTATGTACCTGCATCACGTTGGGTGGTTTCCATTTAGACCGAGGCCGGTTCAGAACTTCCCAAATG
ATGGTCCTCCTCCTGACGTTGTAAATCAGGACCCCAACAATAACTTACAGGAAGGCACTGATCCTGAAAC
TGAAGACCCCAACCACCTCCCTCCAGACAGGGATGTACTAGATGGCGAGCAGACCAGCCCCTCCTTTATG
AGCACAGCATGGCTTGTCTTCAAGACTTTCTTTGCCTCTCTTCTTCCAGAAGGCCCCCCAGCCATCGCAA
ACTGATGGTGTTTGTGCTGTAGCTGTTGGAGGCTTTGACAGGAATGGACTGGATCACCTGACTCCAGCTA
GATTGCCTCTCCTGGACATGGCAATGATGAGTTTTTAAAAAACAGTGTGGATGATGATATGCTTTTGTGA
GCAAGCAAAAGCAGAAACGTGAAGCCGTGATACAAATTGGTGAACAAAAAATGCCCAAGGCTTCTCATGT
CTTTATTCTGAAGAGCTTTAATATATACTCTATGTAGTTTAATAAGCACTGTACGTAGAAGGCCTTAGGT
GTTGCATGTCTATGCTTGAGGAACTTTTCCAAATGTGTGTGTCTGCATGTGTGTTTGTACATAGAAGTCA
TAGATGCAGAAGTGGTTCTGCTGGTACGATTTGATTCCTGTTGGAATGTTTAAATTACACTAAGTGTACT
ACTTTATATAATCAATGAAATTGCTAGACATGTTTTAGCAGGACTTTTCTAGGAAAGACTTATGTATAAT
TGCTTTTTAAAATGCAGTGCTTTACTTTAAACTAAGGGGAACTTTGCGGAGGTGAAAACCTTTGCTGGGT
TTTCTGTTCAATAAAGTTTTACTATGAAAAAAAAAAAAAAAAA

Human HERPUD1 mRNA sequence - var6 (public gi: 12652674) (SEQ ID NO: 82)

GAACTGTCGTTGCAGAGATTGCGGGCGGCTGAGACGCCGCCTGCCTGGCACCTAGGAGCGCAGCGGAGCC
CCGACACCGCCGCCGCCGCCATGGAGTCCGAGACCGAACCCGAGCCCGTCACGCTCCTGGTGAAGAGCCC
CAACCAGCGCCACCGCGACTTGGAGCTGAGTGGCGACCGCGGCTGGAGTGTGGGCCACCTCAAGGCCCAC

Figure 36 part - 43

CTGAGCCGCGTCTACCCCGAGCGTCCGCGTCCAGAGGACCAGAGGTTAATTTATTCTGGGAAGCTGTTGT
TGGATCACCAATGTCTCAGGGACTTGCTTCCAAAGCAGGAAAAACGGCATGTTTTGCATCTGGTGTGCAA
TGTGAAGAGTCCTTCAAAAATGCCAGAAATCAACGCCAAGGTGGCTGAATCCACAGAGGAGCCTGCTGGT
TCTAATCGGGGACAGTATCCTGAGGATTCCTCAAGTGATGGTTTAAGGCAAAGGGAAGTTCTTCGGAACC
TTTCTTCCCCTGGATGGGAAAACATCTCAAGGCCTGAAGCTGCCCAGCAGGCATTCCAAGGCCTGGGTCC
TGGTTTCTCCGGTTACACACCCTATGGGTGGCTTCAGCTTTCCTGGTTCCAGCAGATATATGCACGACAG
TACTACATGCAATATTTAGCAGCCACTGCTGCATCAGGGGCTTTTGTTCCACCACCAAGTGCACAAGAGA
TACCTGTGGTCTCTGCACCTGCTCCAGCCCCTATTCACAACCAGTTTCCAGCTGAAAACCAGCCTGCCAA
TCAGAATGCTGCTCCTCAAGTGGTTGTTAATCCTGGAGCCAATCAAAATTTGCGGATGAATGCACAAGGT
GGCCCTATTGTGGAAGAAGATGATGAAATAAATCGAGATTGGTTGGATTGGACCTATTCAGCAGCTACAT
TTTCTGTTTTTTCTCAGTATCCTCTACTTCTACTCCTCCCTGAGCAGATTCCTCATGGTCATGGGGGCCAC
CGTTGTTATGTACCTGCATCACGTTGGGTGGTTTCCATTTAGACCGAGGCCGGTTCAGAACTTCCCAAAT
GATGGTCCTCCTCCTGACGTTGTAAATCAGGACCCCAACAATAACTTACAGGAAGGCACTGATCCTGAAA
CTGAAGACCCCAACCACCTCCCTCCAGACAGGGATGTACTAGATGGCGAGCAGACCAGCCCCTCCTTTAT
GAGCACAGCATGGCTTGTCTTCAAGACTTTCTTTGCCTCTCTTCTTCCAGAAGGCCCCCCAGCCATCGCA
AACTGATGGTGTTTGTGCTGTAGCTGTTGGAGGCTTTGACAGGAATGGACTGGATCACCTGACTCCAGCT
AGATTGCCTCTCCTGGACATGGCAATGATGAGTTTTTAAAAAACAGTGTGGATGATGATATGCTTTTGTG
AGCAAGCAAAAGCAGAAACGTGAAGCCGTGATACAAATTGGTGAACAAAAAATGCCCAAGGCTTCTCATG
TCTTTATTCTGAAGAGCTTTAATATATACTCTATGTAGTTTAATAAGCACTGTACGTAGAAGGCCTTAGG
TGTTGCATGTCTATGCTTGAGGAACTTTTCCAAATGTGTGTGTCTGCATGTGTGTTTGTACATAGAAGTC
ATAGATGCAGAAGTGGTTCTGCTGGTACGATTTGATTCCTGTTGGAATGTTTAAATTACACTAAGTGTAC
TACTTTATATAATCAATGAAATTGCTAGACATGTTTTAGCAGGACTTTTCTAGGAAAGACTTATGTATAA
TTGCTTTTTAAAATGCAGTGCTTTACTTTAAACTAAGGGGAACTTTGCGGAGGTGAAAACCTTTGCTGGG
TTTTCTGTTCAATAAAGTTTTACTATGAATGAAAAAAAAAAAAAAAAAAA

Human HERPUD1 mRNA sequence - var7 (public gi: 9711684) (SEQ ID NO: 83)

AGAGACGTGAACTGTCGTTGCAGAGATTGCGGGCGGCTGAGACGCCGCCTGCCTGGCACCTAGGAGCGCA
GCGGAGCCCCGACACCGCCGCCGCCGCCATGGAGTCCGAGACCGAACCCGAGCCCGTCACGCTCCTGGTG
AAGAGCCCCAACCAGCGCCACCGCGACTTGGAGCTGAGTGGCGACCGCGGCTGGAGTGTGGGCCACCTCA
AGGCCCACCTGAGCCGCGTCTACCCCGAGCGTCCGCGTCCAGAGGACCAGAGGTTAATTTATTCTGGGAA
GCTGTTGTTGGATCACCAATGTCTCAGGGACTTGCTTCCAAAGCAGGAAAAACGGCATGTTTTGCATCTG
GTGTGCAATGTGAAGAGTCCTTCAAAAATGCCAGAAATCAACGCCAAGGTGGCTGAATCCACAGAGGAGC
CTGCTGGTTCTAATCGGGGACAGTATCCTGAGGATTCCTCAAGTGATGGTTTAAGGCAAAGGGAAGTTCT
TCGGAACCTTTCTTCCCCTGGATGGGAAAACATCTCAAGGCCTGAAGCTGCCCAGCAGGCATTCCAAGGC
CTGGGTCCTGGTTTCTCCGGTTACACACCCTATGGGTGGCTTCAGCTTTCCTGGTTCCAGCAGATATATG
CACGACAGTACTACATGCAATATTTAGCAGCCACTGCTGCATCAGGGGCTTTTGTTCCACCACCAAGTGC
ACAAGAGATACCTGTGGTCTCTGCACCTGCTCCAGCCCCTATTCACAACCAGTTTCCAGCTGAAAACCAG
CCTGCCAATCAGAATGCTGCTCCTCAAGTGGTTGTTAATCCTGGAGCCAATCAAAATTTGCGGATGAATG
CACAAGGTGGCCCTATTGTGGAAGAAGATGATGAAATAAATCGAGATTGGTTGGATTGGACCTATTCAGC
AGCTACATTTTCTGTTTTTCTCAGTATCCTCTACTTCTACTCCTCCCTGAGCAGATTCCTCATGGTCATG
GGGGCCACCGTTGTTATGTACCTGCATCACGTTGGGTGGTTTCCATTTAGACCGAGGCCGGTTCAGAACT
TCCCAAATGATGGTCCTCCTCCTGACGTTGTAAATCAGGACCCCAACAATAACTTACAGGAAGGCACTGA
TCCTGAAACTGAAGACCCCAACCACCTCCCTCCAGACAGGGATGTACTAGATGGCGAGCAGACCAGCCCC
TCCTTTATGAGCACAGCATGGCTTGTCTTCAAGACTTTCTTTGCCTCTCTTCTTCCAGAAGGCCCCCCAG
CCATCGCAAACTGATGGTGTTTGTGCTGTAGCTGTTGGAGGCTTTGACAGGAATGGACTGGATCACCTGA
CTCCAGCTAGATTGCCTCTCCTGGACATGGCAATGATGAGTTTTTAAAAAACAGTGTGGATGATGATATG
CTTTTGTGAGCAAGCAAAAGCAGAAACGTGAAGCCGTGATACAAATTGGTGAACAAAAAATGCCCAAGGC
TTCTCATGTCTTTATTCTGAAGAGCTTTAATATATACTCTATGTAGTTTAATAAGCACTGTACGTAGAAG
GCCTTAGGTGTTGCATGTCTATGCTTGAGGAACTTTTCCAAATGTGTGTGTCTGCATGTGTGTTTGTACA
TAGAAGTCATAGATGCAGAAGTGGTTCTGCTGGTACGATTTGATTCCTGTTGGAATGTTTAAATTACACT
AAGTGTACTACTTTATATAATCAATGAAATTGCTAGACATGTTTTAGCAGGACTTTTCTAGGAAAGACTT
ATGTATAATTGCTTTTTAAAATGCAGTGCTTTACTTTAAACTAAGGGGAACTTTGCGGAGGTGAAAACCT
TTGCTGGGTTTTCTGTTCAATAAAGTTTTACTATGAATGACCCTG

Human HERPUD1 mRNA sequence - var8 (public gi: 3005718) (SEQ ID NO: 84)

GACGTGAACGGTCGTTGCAGAGATTGCGGGCGGCTGAGACGCCGCCTGCCTGGCACCTAGGAGCGCAGCG
GAGCCCCGACACCGCCGCCGCCGCCATGGAGTCCGAGACCGAACCCGAGCCCGTCACGCTCCTGGTGAAG
AGCCCCAACCAGCGCCACCGCGACTTGGAGCTGAGTGGCGACCGCGGCTGGAGTGTGGGCCACCTCAAGG
CCCACCTGAGCCGCGTCTACCCCGAGCGTCCGCGTCCAGAGGACCAGAGGTTAATTTATTCTGGGAAGCT
GTTGTTGGATCACCAATGTCTCAGGGACTTGCTTCCAAAGCAGGAAAAACGGCATGTTTTGCATCTGGTG
TGCAATGTGAAGAGTCCTTCAAAAATGCCAGAAATCAACGCCAAGGTGGCTGAATCCACAGAGGAGCCTG
CTGGTTCTAATCGGGGACAGTATCCTGAGGATTCCTCAAGTGATGGTTTAAGGCAAAGGGAAGTTCTTCG

Figure 36 part - 44

GAACCTTTCTTCCCCTGGATGGGAAAACATCTCAAGGCCTGAAGCTGCCCAGCAGGCATTCCAAGGCCTG
GGTCCTGGTTTCTCCGGTTACACACCCTATGGGTGGCTTCAGCTTTCCTGGTTCCAGCAGATATATGCAC
GACAGTACTACATGCAATATTTAGCAGCCACTGCTGCATCAGGGGCTTTTGTTCCACCACCAAGTGCACA
AGAGATACCTGTGGTCTCTGCACCTGCTCCAGCCCCTATTCACAACCAGTTTCCAGCTGAAAACCAGCCT
GCCAATCAGAATGCTGCTCCTCAAGTGGTTGTTAATCCTGGAGCCAATCAAAATTTGCGGATGAATGCAC
AAGGTGGCCCTATTGTGGAAGAAGATGATGAAATAAATCGAGATTGGTTGGATTGGACCTATTCAGCAGC
TACATTTTCTGTTTTTCTCAGTATCCTCTACTTCTACTCCTCCCTGAGCAGATTCCTCATGGTCATGGGG
GCCACCGTTGTTATGTACCTGCATCACGTTGGGTGGTTTCCATTTAGACCGAGGCCGGTTCAGAACTTCC
CAAATGATGGTCCTCCTCCTGACGTTGTAAATCAGGACCCCAACAATAACTTACAGGAAGGCACTGATCC
TGAAACTGAAGACCCCAACCACCTCCCTCCAGACAGGGATGTACTAGATGGCGAGCAGACCAGCCCCTCC
TTTATGAGCACAGCATGGCTTGTCTTCAAGACTTTCTTTGCCTCTCTTCTTCCAGAAGGCCCCCCAGCCA
TCGCAAACTGATGGTGTTTGTGCTGTAGCTGTTGGAGGCTTTGACAGGAATGGACTGGATCACCTGACTC
CAGCTAGATTGCCTCTCCTGGACATGGCAATGATGAGTTTTTAAAAAACAGTGTGGATGATGATATGCTT
TTGTGAGCAAGCAAAAGCAGAAACGTGAAGCCGTGATACAAATTGGTGAACAAAAAATGCCCAAGGCTTC
TCATGTCTTTATTCTGAAGAGCTTTAATATATACTCTATGTAGTTTAATAAGCACTGTACGTAGAAGGCC
TTAGGTGTTGCATGTCTATGCTTGAGGAACTTTTCCAAATGTGTGTGTCTGCATGTGTGTTTGTACATAG
AAGTCATAGATGCAGAAGTGGTTCTGCTGGTACGATTTGATTCCTGTTGGAATGTTTAAATTACACTAAG
TGTACTACTTTATATAATCAATGAAATTGCTAGACATGTTTTAGCAGGACTTTTCTAGGAAAGACTTATG
TATAATTGCTTTTTAAAATGCAGTGCTTTACTTTAAACTAAGGGGAACTTTGCGGAGGTGAAAACCTTTG
CTGGGTTTTCTGTTCAATAAAGTTTTACTATGAATGACCCTGAAAAAAAAAAAAAAAAAAAAA

Human HERPUD1 mRNA sequence - var9 (public gi: 285960) (SEQ ID NO: 85)

CGTGAACGGTCGTTGCAGAGATTGCGGGCGGCTGAGACGCCGCCTGCCTGGCACCTAGGAGCGCAGCGGA
GCCCCGACACCGCCGCCGCCGCCATGGAGTCCGAGACCGAACCCGAGCCCGTCACGCTCCTGGTGAAGAG
CCCCAACCAGCGCCACCGCGACTTGGAGCTGAGTGGCGACCGCGGCTGGAGTGTGGGCCACCTCAAGGCC
CACCTGAGCCGCGTCTACCCCGAGCGTCCGCGTCCAGAGGACCAGAGGTTAATTTATTCTGGGAAGCTGT
TGTTGGATCACCAATGTCTCAGGGACTTGCTTCCAAAGCAGGAAAAACGGCATGTTTTGCATCTGGTGTG
CAATGTGAAGAGTCCTTCAAAAATGCCAGAAATCAACGCCAAGGTGGCTGAATCCACAGAGGAGCCTGCT
GGTTCTAATCGGGGACAGTATCCTGAGGATTCCTCAAGTGATGGTTTAAGGCAAAGGGAAGTTCTTCGGA
ACCTTTCTTCCCCTGGATGGGAAAACATCTCAAGGCCTGAAGCTGCCCAGCAGGCATTCCAAGGCCTGGG
TCCTGGTTTCTCCGGTTACACACCCTATGGGTGGCTTCAGCTTTCCTGGTTCCAGCAGATATATGCACGA
CAGTACTACATGCAATATTTAGCAGCCACTGCTGCATCAGGGGCTTTTGTTCCACCACCAAGTGCACAAG
AGATACCTGTGGTCTCTGCACCTGCTCCAGCCCCTATTCACAACCAGTTTCCAGCTGAAAACCAGCCTGC
CAATCAGAATGCTGCTCCTCAAGTGGTTGTTAATCCTGGAGCCAATCAAAATTTGCGGATGAATGCACAA
GGTGGCCCTATTGTGGAAGAAGATGATGAAATAAATCGAGATTGGTTGGATTGGACCTATTCAGCAGCTA
CATTTTCTGTTTTTCTCAGTATCCTCTACTTCTACTCCTCCCTGAGCAGATTCCTCATGGTCATGGGGGC
CACCGTTGTTATGTACCTGCATCACGTTGGGTGGTTTCCATTTAGACCGAGGCCGGTTCAGAACTTCCCA
AATGATGGTCCTCCTCCTGACGTTGTAAATCAGGACCCCAACAATAACTTACAGGAAGGCACTGATCCTG
AAACTGAAGACCCCAACCACCTCCCTCCAGACAGGGATGTACTAGATGGCGAGCAGACCAGCCCCTCCTT
TATGAGCACAGCATGGCTTGTCTTCAAGACTTTCTTTGCCTCTCTTCTTCCAGAAGGCCCCCCAGCCATC
GCAAACTGATGGTGTTTGTGCTGTAGCTGTTGGAGGCTTTGACAGGAATGGACTGGATCACCTGACTCCA
GCTAGATTGCCTCTCCTGGACATGGCAATGATGAGTTTTTAAAAAACAGTGTGGATGATGATATGCTTTT
GTGAGCAAGCAAAAGCAGAAACGTGAAGCCGTGATACAAATTGGTGAACAAAAAATGCCCAAGGCTTCTC
ATGTGTTTATTCTGAAGAGCTTTAATATATACTCTATGTAGTTTAATAAGCACTGTACGTAGAAGGCCTT
AGGTGTTGCATGTCTATGCTTGAGGAACTTTTCCAAATGTGTGTGTCTGCATGTGTGTTTGTACATAGAA
GTCATAGATGCAGAAGTGGTTCTGCTGGTAAGATTTGATTCCTGTTGGAATGTTTAAATTACACTAAGTG
TACTACTTTATATAATCAATGAAATTGCTAGACATGTTTTAGCAGGACTTTTCTAGGAAAGACTTATGTA
TAATTGCTTTTTAAAATGCAGTGCTTTACTTTAAACTAAGGGGAACTTTGCGGAGGTGAAAACCTTTGCT
GGGTTTTCTGTTCAATAAAGTTTTACTATGAATGACCCTG

Human HERPUD1 mRNA sequence - var10 (public gi: 7661869) (SEQ ID NO: 86)

GACGTGAACGGTCGTTGCAGAGATTGCGGGCGGCTGAGACGCCGCCTGCCTGGCACCTAGGAGCGCAGCG
GAGCCCCGACACCGCCGCCGCCGCCATGGAGTCCGAGACCGAACCCGAGCCCGTCACGCTCCTGGTGAAG
AGCCCCAACCAGCGCCACCGCGACTTGGAGCTGAGTGGCGACCGCGGCTGGAGTGTGGGCCACCTCAAGG
CCCACCTGAGCCGCGTCTACCCCGAGCGTCCGCGTCCAGAGGACCAGAGGTTAATTTATTCTGGGAAGCT
GTTGTTGGATCACCAATGTCTCAGGGACTTGCTTCCAAAGCAGGAAAAACGGCATGTTTTGCATCTGGTG
TGCAATGTGAAGAGTCCTTCAAAAATGCCAGAAATCAACGCCAAGGTGGCTGAATCCACAGAGGAGCCTG
CTGGTTCTAATCGGGGACAGTATCCTGAGGATTCCTCAAGTGATGGTTTAAGGCAAAGGGAAGTTCTTCG
GAACCTTTCTTCCCCTGGATGGGAAAACATCTCAAGGCCTGAAGCTGCCCAGCAGGCATTCCAAGGCCTG
GGTCCTGGTTTCTCCGGTTACACACCCTATGGGTGGCTTCAGCTTTCCTGGTTCCAGCAGATATATGCAC
GACAGTACTACATGCAATATTTAGCAGCCACTGCTGCATCAGGGGCTTTTGTTCCACCACCAAGTGCACA
AGAGATACCTGTGGTCTCTGCACCTGCTCCAGCCCCTATTCACAACCAGTTTCCAGCTGAAAACCAGCCT

Figure 36 part - 45

GCCAATCAGAATGCTGCTCCTCAAGTGGTTGTTAATCCTGGAGCCAATCAAAATTTGCGGATGAATGCAC
AAGGTGGCCCTATTGTGGAAGAAGATGATGAAATAAATCGAGATTGGTTGGATTGGACCTATTCAGCAGC
TACATTTTCTGTTTTTCTCAGTATCCTCTACTTCTACTCCTCCCTGAGCAGATTCCTCATGGTCATGGGG
GCCACCGTTGTTATGTACCTGCATCACGTTGGGTGGTTTCCATTTAGACCGAGGCCGGTTCAGAACTTCC
CAAATGATGGTCCTCCTCCTGACGTTGTAAATCAGGACCCCAACAATAACTTACAGGAAGGCACTGATCC
TGAAACTGAAGACCCCAACCACCTCCCTCCAGACAGGGATGTACTAGATGGCGAGCAGACCAGCCCCTCC
TTTATGAGCACAGCATGGCTTGTCTTCAAGACTTTCTTTGCCTCTCTTCTTCCAGAAGGCCCCCCAGCCA
TCGCAAACTGATGGTGTTTGTGCTGTAGCTGTTGGAGGCTTTGACAGGAATGGACTGGATCACCTGACTC
CAGCTAGATTGCCTCTCCTGGACATGGCAATGATGAGTTTTTAAAAAACAGTGTGGATGATGATATGCTT
TTGTGAGCAAGCAAAAGCAGAAACGTGAAGCCGTGATACAAATTGGTGAACAAAAAATGCCCAAGGCTTC
TCATGTCTTTATTCTGAAGAGCTTTAATATATACTCTATGTAGTTTAATAAGCACTGTACGTAGAAGGCC
TTAGGTGTTGCATGTCTATGCTTGAGGAACTTTTCCAAATGTGTGTGTCTGCATGTGTGTTTGTACATAG
AAGTCATAGATGCAGAAGTGGTTCTGCTGGTACGATTTGATTCCTGTTGGAATGTTTAAATTACACTAAG
TGTACTACTTTATATAATCAATGAAATTGCTAGACATGTTTTAGCAGGACTTTTCTAGGAAAGACTTATG
TATAATTGCTTTTTAAAATGCAGTGCTTTACTTTAAACTAAGGGGAACTTTGCGGAGGTGAAAACCTTTG
CTGGGTTTTCTGTTCAATAAAGTTTTACTATGAATGACCCTGAAAAAAAAAAAAAAAAAAAAAA

Human HERPUD1 Protein sequence - var1 (public gi: 16507802) (SEQ ID NO: 249)
MESETEPEPVTLLVKSPNQRHRDLELSGDRGWSVGHLKAHLSRVYPERPREDQRLIYSGKLLLDHQCLR
DLLPKEKRHVLHLVCNVKSPSKMPEINAKVAESTEEPAGSNRGQYPEDSSSDGLRQREVLRNLSSPGWEN
ISRHHVGWFPFRPRPVQNFPNDGPPPDVVNQDPNNNLQEGTDPETEDPNHLPPDRDVLDGEQTSPSFMST
AWLVFKTFFASLLPEGPPAIAN

Human HERPUD1 Protein sequence - var2 (public gi: 10441911) (SEQ ID NO: 250)
MQYLAATAASGAFVPPPSAQEIPVVSAPAPAPIHNQFPAENQPANQNAAPQVVVNPGANQNLRMNAQGGP
IVEEDDEINRDWLDWTYSAATFSVFLSILYFYSSLSRFLMVMGATVVMYLHHVGWFPFRPRPVQNFPNDG
PPPDVVNQDPNNNLQEGTDPETEDPNHLPPDRDVLDGEQTSPSFMSTAWLVFKTFFASLLPEGPPAIAN

Human HERPUD1 Protein sequence - var3 (public gi: 3005723) (SEQ ID NO: 251)
GHLKAHLSRVYPERPRPEDQRLIYSGKLLLDHQCLRDLLPKEKRHVLHLVCNVKSPSKMPEINAKVAEST
EEPAGSNRGQYPEDSSSDGLRQREVLRNLSSPGWENISRPEAAQQAFQGLGPGFSGYTPYGWLQLSWFQQ
IYARQYYMQYLAATAASGAFVPPPSAQEIPVVSAPAPAPIHNQFPAENQPANQNAAPQVVVNPGANQNLR
MNAQGGPIVEEDDEINRDWLDWTYSAATFSVFLSILYFYSSLSRFLMVMGATVVMYLHHVGWFPFRPRPV
QNFPNDGPPPDVVNQDPNNNLQEGTDPETEDPNHLPPDRDVLDGEQTSPSFMSTAWLVFKTFFASLLPEG
PPAIAN

Human HERPUD1 Protein sequence - var4 (public gi: 7661870) (SEQ ID NO: 252)
MESETEPEPVTLLVKSPNQRHRDLELSGDRGWSVGHLKAHLSRVYPERPRPEDQRLIYSGKLLLDHQCLR
DLLPKQEKRHVLHLVCNVKSPSKMPEINAKVAESTEEPAGSNRGQYPEDSSSDGLRQREVLRNLSSPGWE
NISRPEAAQQAFQGLGPGFSGYTPYGWLQLSWFQQIYARQYYMQYLAATAASGAFVPPPSAQEIPVVSAP
APAPIHNQFPAENQPANQNAAPQVVVNPGANQNLRMNAQGGPIVEEDDEINRDWLDWTYSAATFSVFLSI
LYFYSSLSRFLMVMGATVVMYLHHVGWFPFRPRPVQNFPNDGPPPDVVNQDPNNNLQEGTDPETEDPNHL
PPDRDVLDGEQTSPSFMSTAWLVFKTFFASLLPEGPPAIAN

Unigene Name: HLA-A Unigene ID: Hs.181244 Clone ID: GD_159

Human HLA-A mRNA sequence - var1 (public gi: 575248) (SEQ ID NO: 87)
ATGGCCGTCATGGCGCCCCGAACCCTCGTCCTGCTACTCTCGGGGGCTCTGGCCCTGACCCAGACCTGGG
CGGGCTCTCACTCCATGAGGTATTTCTTCACATCCGTGTCCCGGCCCGGCCGCGGGGAGCCCCGCTTCAT
CGCAGTGGGCTACGTGGACGACACGCAGTTCGTGCGGTTCGACAGCGACGCCGCGAGCCAGAGGATGGAG
CCGCGGGCGCCGTGGATAGAGCAGGAGGGTCCGGAGTATTGGGACGGGGAGACACGGAAAGTGAAGGCCC
ACTCACAGACTCACCGAGTGGACCTGGGGACCCTGCGCGGCTACTACAACCAGAGCGAGGCCGGTTCTCA
CACCGTCCAGAGGATGTATGGCTGCGACGTGGGGTCGGACTGGCGCTTCCTCCGCGGGTACCACCAGTAC
GCCTACGACGGCAAGGATTACATCGCCCTGAAAGAGGACCTGCGCTCTTGGACCGCGGCGGACATGGCAG
CTCAGACCACCAAGCACAAGTGGGAGGCGGCCCATGTGGCGGAGCAGTTGAGAGCCTACCTGGAGGGCGA
GTGCGTGGAGTGGCTCCGCAGATACCTGGAGAACGGGAAGGAGACGCTGCAGCGCACGGACGCCCCCAAA
ACGCATATGACTCACCACGCTGTCTCTGACCATGAAGCCACCCTGAGGTGCTGGGCCCTGAGCTTCTACC

Figure 36 part - 46

CTGCGGAGATCACACTGACCTGGCAGCGGGATGGGGAGGACCAGACCCAGGACACGGAGCTCGTGGAGAC
CAGGCCTGCAGGGGATGGAACCTTCCAGAAGTGGGCGGCTGTGGTGGTGCCTTCTGGACAGGAGCAGAGA
TACACCTGCCATGTGCAGCATGAGGGTTTGCCCAAGCCCCTCACCCTGAGATGGGAGCCGTCTTCCCAGC
CCACCATCCCCATCGTGGGCATCATTGCTGGCCTGGTTCTCTTTGGAGCTGTGATCACTGGAGCTGTGGT
CGCTGCTGTGATGTGGAGGAGGAAGAGCTCAGATAGAAAAGGAGGGAGCTACTCTCAGGCTGCAAGCAGT
GACAGTGCCCAGGGCTCTGATGTGTCTCTCACAGCTTGTAAAGTGTGA

Human HLA-A mRNA sequence - var2 (public gi: 187857) (SEQ ID NO: 88)
ATGGCCGTCATGGCGCCCCGAACCCTCGTCCTGCTACTCTCGGGGGCCCTGGCCCTGACCCAGACCTGGG
CGGGCTCCCACTCCATGAGGTATTTCTACACTTCCGTGTCCCGGCCCGGCCGCGGGGAGCCCCGCTTCAT
CGCCGTGGGCTACGTGGACGACACGCAGTTCGTGCGGTTCGACAGCGACGCCGCGAGCCAGAGGATGGAG
CCGCGGGCGCCGTGGATAGAGCAGGAGGGGCCGGAGTATTGGGACCGGAACACACGGAATGTGAAGGCCC
AGTCACAGACTGACCGAGTGGACCTGGGGACCCTGCGCGGCTACTACAACCAGAGCGAGGCCGGTTCTCA
CACCATCCAGATGATGTATGGCTGCGACGTGGGGTCGGACGGGCGCTTCCTCCGCGGGTACCGGCAGGAC
GCCTACGACGGCAAGGATTACATCGCCCTGAAAGAGGACCTGCGCTCTTGGACCGCGGCGGACATGGCAG
CTCAGACCACCAAGCACAAGTGGGAGGCGGCCCATGTGGCGGAGCAGTGGAGAGCCTACCTGGAGGGCAC
GTGCGTGGAGTGGCTCCGCAGATACCTGGAGAACGGGAAGGAGACGCTGCAGCGCACGGACGCCCCCAAA
ACGCATATGACTCACCACGCTGTCTCTGACCATGAAGCCACCCTGAGGTGCTGGGCCCTGAGCTTCTACC
CTGCGGAGATCACACTGACCTGGCAGCGGGATGGGGAGGACCAGACCCAGGACACGGAGCTCGTGGAGAC
CAGGCCTGCAGGGGATGGAACCTTCCAGAAGTGGGTGGCTGTGGTGGTGCCTTCTGGACAGGAGCAGAGA
TACACCTGCCATGTGCAGCATGAGGGTTTGCCCAAGCCCCTCACCCTGAGATGGGAGCCGTCTTCCCAGC
CCACCATCCCCATCGTGGGCATCATTGCTGGCCTGGTTCTCTTTGGAGCTGTGATCACTGGAGCTGTGGT
CGCTGCTGTGATGTGGAGGAGGAAGAGCTCAGATAGAAAAGGAGGGAGCTACTCTCAGGCTGCAAGCAGT
GACAGTGCCCAGGGCTCTGATGTGTCTCTCACAGCTTGTAAAGTGTGA

Human HLA-A protein sequence - var1 (public gi: 575249) (SEQ ID NO: 253)
MAVMAPRTLVLLLSGALALTQTWAGSHSMRYFFTSVSRPGRGEPRFIAVGYVDDTQFVRFDSDAASQRME
PRAPWIEQEGPEYWDGETRKVKAHSQTHRVDLGTLRGYYNQSEAGSHTVQRMYGCDVGSDWRFLRGYHQY
AYDGKDYIALKEDLRSWTAADMAAQTTKHKWEAAHVAEQLRAYLEGECVEWLRRYLENGKETLQRTDAPK
THMTHHAVSDHEATLRCWALSFYPAEITLTWQRDGEDQTQDTELVETRPAGDGTFQKWAAVVVPSGQEQR
YTCHVQHEGLPKPLTLRWEPSSQPTIPIVGIIAGLVLFGAVITGAVVAAVMWRRKSSDRKGGSYSQAASS
DSAQGSDVSLTACKV

Figure 36 part - 47

Unigene Name: HLA-B Unigene ID: Hs.77961 Clone ID: 3GD_1122

Human HLA-B mRNA sequence - var1 (public gi: 32188) (SEQ ID NO: 89)

ATGCGGGTCACGGCGCCCCGAACCGTCCTCCTGCTGCTCTCGGGAGCCCTGGCCCTGACCGAGACCTGGG
CCGGCTCCCACTCCATGAGGTATTTCTACACCGCCATGTCCCGGCCCGGCCGCGGGGAGCCCCGCTTCAT
CTCAGTGGGCTACGTGGACGACACGCAGTTCGTGAGGTTCGACAGCGACGCCGCGAGTCCGAGAGAGGAG
CCGCGGGCGCCGTGGATAGAGCAGGAGGGGCCGGAGTATTGGGACCGGGAGACACAGATCTCCAAGACCA
ACACACAGACTTACCGAGAGAGCCTGCGGAACCTGCGCGGCTACTACAACCAGAGCGAGGCCGGGTCTCA
CACCCTCCAGAGGATGTACGGCTGCGACGTGGGGCCGGACGGGCGCCTCCTCCGCGGGCATGACCAGTCC
GCCTACGACGGCAAGGATTACATCGCCCTGAACGAGGACCTGAGCTCCTGGACCGCGGCGGACACGGCGG
CTCAGATCACCCAGCGCAAGTGGGAGGCGGCCCGTGAGGCGGAGCAGCTGAGAGCCTACCTGGAGGGCCT
GTGCGTGGAGTGGCTCCGCAGATACCTGGAGAACGGGAAGGAGACGCTGCAGCGCGCGGACCCCCCAAAG
ACACATGTGACCCACCACCCCCATCTCTGACCATGAGGCCACCCTGAGGTGCTGGGCCCTGGGCTTCTACC
CTGCGGAGATCACACTGACCTGGCAGCGGGATGGCGAGGACCAAACTCAGGACACCGAGCTTGTGGAGAC
CAGACCAGCAGGAGATAGAACCTTCCAGAAGTGGGCAGCTGTGGTGGTGCCTTCTGGAGAAGAGCAGAGA
TACACATGCCATGTACAGCATGAGGGGCTGCCGAAGCCCCTCACCCTGAGATGGGAGCCATCTTCCCAGT
CCACCATCCCCATCGTGGGCATTGTTGCTGGCCTGGCTGTCCTAGCAGTTGTGGTCATCGGAGCTGTGGT
CGCTACTGTGATGTGTAGGAGGAAGAGCTCAGGTGGAAAAGGAGGGAGCTACTCTCAGGCTGCGTCCAGC
GACAGTGCCCAGGGCTCTGATGTGTCTCTCACAGCTTGA

Human HLA-B protein sequence - var1 (public gi: 32189) (SEQ ID NO: 254)

MRVTAPRTVLLLLSGALALTETWAGSHSMRYFYTAMSRPGRGEPRFISVGYVDDTQFVRFDSDAASPREE
PRAPWIEQEGPEYWDRETQISKTNTQTYRESLRNLRGYYNQSEAGSHTLQRMYGCDVGPDGRLLRGHDQS
AYDGKDYIALNEDLSSWTAADTAAQITQRKWEAAREAEQLRAYLEGLCVEWLRRYLENGKETLQRADPPK
THVTHHPISDHEATLRCWALGFYPAEITLTWQRDGEDQTQDTELVETRPAGDRTFQKWAAVVVPSGEEQR
YTCHVQHEGLPKPLTLRWEPSSQSTIPIVGIVAGLAVLAVVVIGAVVATVMCRRKSSGGKGGSYSQAASS
DSAQGSDVSLTA

Unigene Name: MSTP028 Unigene ID: Hs.302746 Clone ID: GD_1119

Human MSTP028 mRNA sequence - var1 (public gi: 14042294) (SEQ ID NO: 90)

CCCCGCCTCCGCCCCCGGCTGGCGTGAGCTGGGTGTTTCCTGCCTCTCTCAGTCCGGGTTTGGAGACTCC
TGCGTCCTCCGACTTTTCGTGGAAGAGATGTCAGGAGAAAGTGTGGTGAGCTCAGCGGTGCCAGCGGCTG
CTACCCGCACCACTTCCTTCAAGGGCACGAGCCCCAGCTCCAAATACGTGAAGCTGAATGTGGGTGGAGC
CCTCTACTATACCACCATGCAGACGCTGACCAAGCAGGACACCATGCTGAAGGCCATGTTCAGCGGGCGC
ATGGAAGTGCTCACCGACAGTGAAGGCTGGATCCTCATTGACCGCTGTGGGAAGCACTTTGGTACGATAC
TCAACTACCTTCGAGACGGGGCGGTGCCTTTACCCGAGAGCCGCCGGGAGATCGAGGAGCTGCTAGCAGA
AGCCAAGTACTACCTAGTCCAAGGCCTGGTGGAAGAGTGCCAGGCGGCCCTACAAAACAAAGATACTTAT
GAGCCTTTCTGCAAGGTCCCTGTGATCACCTCATCCAAGGAAGAACAAAAACTTATAGCGACTTCAAATA
AGCCAGCCGTGAAGTTGCTCTACAACAGAAGTAACAACAAATACTCATATACCAGCAATTCTGACGACAA
TATGTTGAAAAACATTGAACTGTTTGATAAGCTGTCTCTGCGCTTTAACGGAAGGGTCCTGTTCATAAAG
GATGTTATTGGGGATGAAATCTGCTGCTGGTCCTTTTATGGTCAGGGCCGGAAGATTGCTGAAGTCTGTT
GTACCTCCATCGTCTATGCCACTGAGAAGAAACAGACCAAGGTGGAGTTTCCCGAAGCCCGGATTTATGA
GGAGACCCTGAACATTTTGCTGTATGAGGCCCAGGATGGCCGGGGACCTGACAATGCGCTCCTGGAGGCC
ACAGGCGGGGCGGCGGGGCGCTCCCACCACCTGGACGAGGACGAGGAGCGGGAGCGGATCGAGCGCGTGC
GGAGGATCCACATCAAGCGCCCTGATGACCGGGCCCACCTCCACCAGTGAGCAGGCAAGAGACCGAGCCG
CCCTCCTCTCACCGCCCCCACTCCCTGCCGTGCTACACCCAGATCCTGTGCAGGCTGCCGGGCCCCTTCT
GCTTCCCTTGGAGCCTGGAGATACTTTTGTAACAAGCCAGATGATTATTTTGGTATTGCTTGACAAGGCA
AATTGATTGTCTTGACCCAGGCGTATGACCCCTGTCGTTGAACAAGCTGTGTCTAAGATCTCTACTTTTC
ATGAGAATCTGAGACTCTTTGGAGCCAGGCTTTCTCGGTTCTCAGAGGAAAAGTATGAATGAGTGTGAAG
TGTATGTGAGAACTTTTGTTTGCAATATTTATTTTTGTGGGTGTCGGCTTCCTATGTGGGCTTTTTGGGT
GACACTCCCTTAAGGGTTCAGTTTGACAATTCTGAGAGTTGTCCTGCAGTTGGAGGCCACCAGAGGTATC
TGAGCTCCCTGCTTCCTATTTCATAATCCTCCAGCCCCAGCAGGTCCACTCCTGGTTCCTGTGTGTTTGG
CCCGGGCACAATCCCCACTGCTTTGCTAGACGTGCTTTCTGCCATGTGGCTTTGGGCCTAGAGCTTGTTG
ATAATTGCAGCTTGTGGCAGGGGAAATATGGCTGAATGAGCGTCTAAATCGTTGAGACCAGTGCAACTTT
GGGTGCAAGGCTTTGTTTAGGGATCAAGCCTTTTGCCACCTTGGGCTGGTCTTTGGCCTGGTGCTCACTG
GGACCCCATATGTCTGCGTAGGAGCAGAACTTTCCATGGCAGTAAGTGTCCAGCTCTGTTTCTGGTTCTT
TCCCCAACTCCAGCCCCGTCCAGTTGTTCTCCTGATTGACCCGACTCCACTCCAGGAAGGCCATCTGACC

Figure 36 part - 48

CTGTGACAGGCATAGCTCATAAACTACCCCTCCCTGGGATCCCGCTCCTCTTCAGCCTCCTTCCCCATGA
AGCTGGGCTAACTTTCTAAGTCATTTTGCTTAGAAATTCAGTGTGGCCCATACCCTTTGTCCTCCCAGCC
TGGCATCCAGGCAGGGACACCCTCACACCACCAGCCCCAGGGAGCTTCCCTGCTATAAACACAGACCCCC
TTGTCTTTGCCTCTGATTTTTACACAGTGTAGAGTGGCCAGCAGTGAACAGGTTGAGGATGTGCGGGTAG
ATAGATAACTTTGGGTCTGGTTTGTGTCTGTGTTCATGTTCGTTTAAGGGATATGTGTGACTGTGGGTGG
GGACGTGTGCTTGTGGGGCACAGGTGGCGGCCCCTGCTGGAGCCCGGCTGGGCGCAGCGCCTATGTAGGA
CGGGTGTTCTCAGTGACCTACCTCCCAGGCTCCTCTGCACCTGCAAAGGAACAGGAGTGAGTCGTGACTG
ACAGGGGTGGTTGAGACTAGGTAGAGTAGTTACCAGGAGATGTGAATGTGCGTCAGGTGATGGAT
GGGTTTGTCAAGGGAATCGTTACCGTTTTATACCAAAGGTATTAACATGGGCAGCCTTTGACACATGTAT
TCCAAAAACGAGTTTATATTTTCAAACGGTTTTTACAGCTTAGACTTTGTACTTACTGCCCTGCCTGTGA
CAGTTGTATGCCTTCATTTTGTATCCAACAGCAAAGTCTACAATAAAACTTTAAAACAATCATG

Human MSTP028 mRNA sequence - var2 (public gi: 13994352) (SEQ ID NO: 91)
GGAGACTCCTGCGTCCTCCGACTTTTCATGGAAGAGATGTCAGGAGAAAGTGTGGTGAGCTCAGCGGTGC
CAGCGGCTGCTACCCGCACCACTTCCTTCAAGGGCACGAGCCCCAGCTCCAAATACGTGAAGCTGAATGT
GGGTGGAGCCCTCTACTATACCACCATGCAGACGCTGACCAAGCAGGACACCATGCTGAAGGCCATGTTC
AGCGGGCGCATGGAAGTGCTCACCGACAGTGAAGGCTGGATCCTCATTGACCGCTGTGGGAAGCACTTTG
GTACGATACTCAACTACCTTCGAGACGGGGCGGTGCCTTTACCCGAGAGCCGCCGGGAGATCGAGGAGCT
GCTAGCAGAAGCCAAGTACTACCTAGTCCAAGGCCTGGTGGAAGAGTGCCAGGCGGCCCTACAAAACAAA
GATACTTATGAGCCTTTCTGCAAGGTCCCTGTGATCACCTCATCCAAGGAAGAACAAAAACTTATAGCGA
CTTCAAATAAGCCAGCCGTGAAGTTGCTCTACAACAGAAGTAACAACAAATACTCATATACCAGCAATTC
TGACGACAATATGTTGAAAAACATTGAACTGTTTGATAAGCTGTCTCTGCGCTTTAACGGAAGGGTCCTG
TTCATAAAGGATGTTATTGGGGATGAAATCTGCTGCTGGTCCTTTTATGGTCAGGGCCGGAAGATTGCTG
AAGTCTGTTGTACCTCCATCGTCTATGCCACTGAGAAGAAACAGACCAAGGTGGAGTTTCCCGAAGCCCG
GATTTATGAGGAGACCCTGAACATTTTGCTGTATGAGGCCCAGGATGGCCGGGGACCTGACAATGCGCTC
CTGGAGGCCACAGGCGGGGCGGCGGGGCGCTCCCACCACCTGGACGAGGACGAGGAGCGGGAGCGGATCG
AGCGCGTGCGGAGGATCCACATCAAGCGCCCTGATGACCGGGCCCACCTTCACCAGTGAGCAGGCAAGAG
ACCGAGCCGGCCTCCTCTCACCGCCCCCACTCCCTGCCGTGCTACACCCAGATCCTGTGCAGGCTGCCGG
GCCCCTTCTGCTTCCCTTGGAGCCTGGAGATACTTTTGTAACAAGCCAGATGATTATTTTGGTATTGCTT
GACAAGGCAAATTGATTGTCTTGACCCAGGCGTATGACCCCTGTCGTTGAACAAGCTGTGTCTAAGATCT
CTACTTTTCATGAGAATCTGAGACTCTTTGGAGCCAGGCTTTCTCGGTTCTCAGAGGAAAAGTATGAATG
AGTGTGAAGTGTATGTGAGAACTTTTGTTTGCAATATTTATTTTTGTGGGTGTCGACTTCCTATGTGGGC
TTTTTGGGTGACACTCCCTTAAGGGTTCAGTTTGACAATTCTGAGAGTTGTCCTGCAGTTGGAGGCCACC
AGAGGTATCTGAGCTCCCTGCTTCCTATTTCATAATCCTCCAGCCCCAGCAGGTCCACTCCTGGTTCCTG
TGTGTTTGGCCCGGGCACAATCCCCACTGCTTTGCTAGACGTGCTTTCTGCCATGTGGCTTTGGGCCTAG
AGCTTGTTGATAATTGCAGCTTGTGGCAGTGGAAATATGGCTGAATGAGCGTCTAAATCGTTGAGACCAG
TGCAACTTTGGGTGCAAGGCTTTGTTTAGGGATCAAGCCTTTTGCCACCTTGGGCTGGTCTTTGGCCTGG
TGCTCACTGGGACCCCATATGTCTGCGTAGGAGCAGAACTTTCCATGGCAGTAAGTGTCCAGCTCTGTTT
CTGGTTCTTTCCCCAACTCCAGCCCCGTCCAGTTGTTCTCCTGATTGACCCGACTCCACTCCAGGAAGGC
CATCTGACCCTGTGACAGGCATAGCTCATAAACTACCCCTCCCTGGGATCCCGCTCCTCTTCAGCCTCCT
TCCCCATGAAGCTGGGCTAACTTTCTAAGTCATTTTGCTTAGAAATTCAGTGTGGCCCATACCCTTTGTC
CTCCCAGCCTGGCATCCAGGCAGGGACACCCTCACACCACCAGCCCCAGGGAGCTTCCCTGCTATAAACA
CAGACCCCCTTGTCTTTGCCTCTGATTTTTACACAGTGTAGAGTGGCCAGCAGTGAACAGGTTGAGGATG
TGCGGGTAGATAGATAACTTTGGGTCTGGTTTGTGTCTGTGTTCATGTTTGTTTAAGGGATATGTGTGAC
TGTGGGTGGGGACGTGTGCTTGTGGGGCACAGGTGGCGGCCCCTGCTGGAGCCCGGCTGGGCGCAGCGCC
TATGTAGGACGGGTGTTCTCAGTGACCTACCTCCCAGGCTCCTCTGCACCTGCAAAGGAACAGGAGTGAG
TCGTGACTGACAGGGGTGGTTGAGACTAGACTAGGTAGAGTAGTTACCAGGAGATGTGAATGTGCGTCAG
GTGATGGATGGGTTTGTCAAGGGAATCGTTACCGTTTTATACCAAAGGTATTAACATGGGCAGCCTTTGA
CACATGTATTCCAAAAACGAGTTTATATTTTCAAACGGTTTTTACAGCTTAGACTTTGTACTTACTGCCC
TGCCTGTGACAGTTGTATGCCTTCATTTTGTATCCAACAGCAAAGTCTACAATAAAACTTTAAAACAATC
ATGAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

Human MSTP028 mRNA sequence - var3 (public gi: 25303941) (SEQ ID NO: 92)
CCGGGTTTGGAGACTCCTGCGTCCTCCGACTTTTCATGGAAGAGATGTCAGGAGAAAGTGTGGTGAGCTC
AGCGGTGCCAGCGGCTGCTACCCGCACCACTTCCTTCAAGGGCACGAGCCCCAGCTCCAAATACGTGAAG
CTGAATGTGGGTGGAGCCCTCTACTATACCACCATGCAGACGCTGACCAAGCAGGACACCATGCTGAAGG
CCATGTTCAGCGGGCGCATGGAAGTGCTCACCGACAGTGAAGGCTGGATCCTCATTGACCGCTGTGGGAA
GCACTTTGGTACGATACTCAACTACCTTCGAGACGGGGCGGTGCCTTTACCCGAGAGCCGCCGGGAGATC
GAGGAGCTGCTAGCAGAAGCCAAGTACTACCTAGTCCAAGGCCTGGTGGAAGAGTGCCAGGCGGCCCTAC
AAAACAAAGATACTTATGAGCCTTTCTGCAAGGTCCCTGTGATCACCTCATCCAAGGAAGAACAAAAACT
TATAGCGACTTCAAATAAGCCAGCCGTGAAGTTGCTCTACAACAGAAGTAACAACAAATACTCATATACC
AGCAATTCTGACGACAATATGTTGAAAAACATTGAACTGTTTGATAAGCTGTCTCTGCGCTTTAACGGAA

Figure 36 part - 49

GGGTCCTGTTCATAAAGGATGTCATTGGGGATGAAATCTGCTGCTGGTCCTTTTATGGTCAGGGCCGGAA
GATTGCTGAAGTCTGTTGTACCTCCATCGTCTATGCCACTGAGAAGAAACAGACCAAGGTGGAGTTTCCC
GAAGCCCGGATTTATGAGGAGACCCTGAACATTTTGCTGTATGAGGCCCAGGATGGCCGGGGACCTGACA
ATGCGCTCCTGGAGGCCACAGGCGGGGCGGCGGGGCGCTCCCACCACCTGGACGAGGACGAGGAGCGGGA
GCGGATCGAGCGCGTGCGGAGGATCCACATCAAGCGCCCTGATGACCGGGCCCACCTCCACCAGTGAGCA
GGCAAGAGACCGAGCCGCCCTCCTCTCACCGCCCCCACTCCCTGCCGTGCTACACCCAGATCCTGTGCAG
GCTGCCGGGCCCCTTCTGCTTCCCTTGGAGCCTGGAGATACTTTTGTAACAAGCCAGATGATTATTTTGG
TATTGCTTGACAAGGCAAATTGATTGTCTTGACCCAGGCGTATGACCCCTGTCGTTGAACAAGCTGTGTC
TAAGATCTCTACTTTTCATGAGAATCTGAGACTCTTTGGAGCCAGGCTTTCTCGGTTCTCAGAGGAAAAG
TATGAATGAGTGTGAAGTGTATGTGAGAACTTTTGTTTGCAATATTTATTTTTGTGGGTGTCGACTTCCT
ATGTGGGCTTTTTGGGTGACACTCCCTTAAGGGTTCAGTTTGACAATTCTGAGAGTTGTCCTGCAGTTGG
AGGCCACCAGAGGTATCTGAGCTCCCTGCTTCCTATTTCATAATCCTCCAGCCCCAGCAGGTCCACTCCT
GGTTCCTGTGTGTTTGGCCCGGGCACAATCCCCACTGCTTTGCTAGACGTGCTTTCTGCCATGTGGCTTT
GGGCCTAGAGCTTGTTGATAATTGCAGCTTGTGGCAGTGGAAATATGGCTGAATGAGTGTCTAAATCGTT
GAGACCAGTGCAACTTTGGGTGCAAGGCTTTGTTTAGGGATCAAGCCTTTTGCCACCTTGGGCTGGTCTT
TGGCCTGGTGCTCACTGGGACCCCATATGTCTGCGTAGGAGCAGAACTTTCCATGGCAGTAAGTGTCCAG
CTCTGTTTCTGGTTCTTTCCCCAACTCCAGCCCCGTCCAGTTGTTCTCCTGATTGACCCGACTCCACTCC
AGGAAGGCCATCTGACCCTGTGACAGGCATAGCTCATAAACTACCCCTCCCTGGGATCCCGCTCCTCTTC
AGCCTCCTTCCCCATGAAGCTGGGCTAACTTTCTAAGTCATTTTGCTTAGAAATTCAGTGTGGCCCATAC
CCTTTGTCCTCCCAGCCTGGCATCCAGGCAGGGACACCCTCACACCACCAGCCCCAGGGAGCTTCCCTGC
TATAAACACAGACCCCCTTGTCTTTGCCTCTGATTTTTACACAGTGTAGAGTGGCCAGCAGTGAACAGGT
TGAGGATGTGCGGGTAGATAGATAACTTTGGGTCTGGTTTGTGTCTGTGTTCATGTTTGTTTAAGGGATG
TGTGACTGTGGGTGGGGACGTGTGCTTGTGGGGCACAGGTGGCCCCTGCTGGAGCCCGGCTGGGCGCAGC
GCCTATGTAGGACGGGTGTTCTCAGTGACCTACCTCCCAGGCTCCTCTGCACCTGCAAAGGAACAGGAGT
GAGTCGTGACTGACAGGGGTGGTTGAGACTAGACTAGGTAGAGTAGTTACCAGGAGATGTGAATGTGCGT
CAGGTGATGGATGGGTTTGTCAAGGGAATCGTTACCGTTTTATACCAAAGGTATTAACATGGGCAGCCTT
TGACACATGTATTCCAAAAACGAGTTTATATTTTCAAACGGTTTTTACAGCTTAGACTTTGTACTTACTG
CCCTGCCTGTGACAGTTGTATGCCTTCATTTTGTATCCAACAGCAAAGTCTACAATAAAACTTTAAAACA
ATCATGACTGAATGTCAAAATCGTGTATTGGGCAGATGCTTTTTAAACTGTCGTGTGAGAAACTTTTATA
TTAGGCCATTTGGATTTTATTAAGTGCTAAGGAAAGAGGGCTTACAAAATGTTTCGTAAATATTTTATAC
TGTTTAAGTGTTAAACACCAACCCTGTCTTTCTTTTGGGTTGAGCTTTTTTAGAAAGTCGAAGTGAATGT
TGGCCAGGAAAATGGAAAAGCCATTGTATAAATTTTTTTTTGAGGCGGAGTCTTGCTCTATTGGCCAGGC
TGGAGTGTAGTGGCACCATCTCCACTTACCACAACTTGTGCCTCCTGGGTTCAAGCGATTCTGCTGCCTC
AGCCTCCCGAGTAGCTGGGATTGCAGGTACCCATCAGCCCATGCCCAGCTAATTTTGTATTTTTAGTAGA
GATGGGGTTTCACCATGTTGGCCAGGCTGGTCTTGAACTCCTGACCCTGTGATCCGACCACCTTGGCCTC
CCAAAGTGCTGGGATTACAGGTGTGAGTCACCACACCTGGCTGCATAGTGTTTTAAATGTTTGTGTGAAG
AATGAGTTTGTGGAACAATTTGATTTGCTGTGGCCTCTATGCCTAATGAGCTAGTGTTTCTGGCAGCTCT
CTCTACCCAACTTTGCACTTGTAGTTTTGAGTCTTTGTCTCTCTGGAATATGAACAGGTTTATAAAACAT
TCCATGGTGAACAATTCTGTCGGCTGCATTATAGCCATGAGTGAATAGACAGCATTGGCTGGTCCAAGCT
CTGTTATTGAGTATACAAGGAACTGATTTTTCTTATGTTAGCACTAAGGGCAAAAACCAATATTTATAAT
GTAAGCACTATCCAGGTAAAACACTGGCCCAAGATTTGGTAAAGAGATTTCATTGCAATGTAATAACTAC
AGTTTTTTACAAATTGGAACAGCTTTGGTGTGTCGTAATCAAGGGTTTTTTTTGTTTGTTTGTTTCAAAT
AAGCCATCTGATTGTGGTGACTGGGGCCCATGTCCAAGACAATTCCTGGCATATTCTGTCACCCTCCCGT
GGGGCGATCACTGTGTGGGGACCCCATTCCCCAGTTAAAGTGTGTCTCTGTACCTTACAACAGCGATTCA
GGACCCAAGTGTGAACAACACTCAGCCCGCCCTCTGGAGCGTGTGCTGTCTTTAGGGCTCTACCCAAAGT
CACTGTAACAGTTAAGTGTGTCATTAACCTTTCTGTCTCTTTGCGCCATAAAAAAATGCTCAAAGTTTTA
GATGTAGCCACTGTATGTTGTACAAACGTTGGCGACATGTAAAATAAAAGTCATAAAATGCAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

Human MSTP028 mRNA sequence - var4 (public gi: 16552440) (SEQ ID NO: 93)

AGTCCGGGTTTGGAGACTCCTGCGTCCTCCGACTTTTCATGGGCCCTGACATGGCAGGTGATATCCAGGA
CACTGTTGGGTGCCATGGAGTTGGGGAGAGTTGGCCAGAAGAGTTGGATAACCTTGAATTGAATATTGTC
CATGACTGTCGCGTTGCTTCTGCTGTTGCAAGCTGCCTCCCTTTACTCCCAGTCCCATTTACAAAAATAA
CGCTTGTGTTTTACCAGTTATAGTTGTAGTACCCATTCATTATAGAAAATCTGGAAAAGCTAGACAATTC
TTTTTCAGTTTCAGGGAATAGTTCAAACAAGTTATGTGCTGTCAGTGCCCTGCAGCCAAAAAGCACGAGG
AGCATACCTGTAGTCAAGCAAAGTTGGGTTTATTTCCTTGTTGCATTGGGGTGGGGAAGAACTGTGGGAC
ATCTCAGAGAAGGGCTGTGGGCTTGTGTTGGGTGATTTGAGAGACAGTTCAGAGAAGTGGGGCTTTGCTC
TGTGTTGGATGCTGCTGGGAAGCAGGGCTAATTCTGTGATTGGGTCTCAGTGATTCCTGACTTGAAAGCA
GGAAGAATGGAAGGAGGCTAAACTTCTCATTGGTAAAGCAGCAGCTGTAACTCCTATTAGCCAGGATAGG
GGATCTTTGGTCATTTTTGTATTTTGGATAATGTTTATGTTTTTGTCTGTGTCCGGACATGATGACTGAA
TGGTCCTGTTTTTGTCTTGTCGCAAGGGCACAGAGTGGCCTTGTCTGAGGGTGATGTGCTGTGAAAAACT
GTTGATGTTCAATGGGAATGGTAGGGCCAGCCGTGGGGGCTACCCCAGATTCAGCAAAGATTCTGCCCAC
CCTTGCACATTTCCACCTCTACAGTTTTACCTGTTCATTTCAGACATGTTTGCTCTGAGTACACATGTGC

Figure 36 part - 50

CGGATACCAATCTCACTTTCCAGGCCTGCGTAAATCAGCCACTGTATCCATTTCTTTGAGATGTACAGAG
AGTCAGCCATGCTATCAGGGAGATGGTAGTGGGATCTTGCTCTTTTGGGCAGCACTAGTCTAGGAGGTCT
AATTTTGCAATAACTTGGTTCCAAAAGTTTCCATGTCTGTTGTTTAGTCCTCAGAAACACCTTCTCCCTA
CAGGAAGTGATAGGAGTGCGAGCTGGAATCCCATTCAACTTCATAAAGCTTATTTCATCTGTGATGCAGC
TGAAAAATGACACTTAGCTAGCTATTGAGTGGTACATGGCAATAAGGAAATGTAAAGAGACCTGGGCAGT
GCTTTAGGCTGTTTTAGGGTGCAGCCAGGGTGTTCATGTATACAGGTGCTAGGCAGAAAGGAAGTGCTTA
TAACACAAGAGTTAGGGGCACCCTTGTGCCTGCAGGGTCGACAGGCAGGGTCAGTGTATGAGGCTTTTTG
GGTGGGTCTTGGGACAAACTAGGGGATGCATGGCCCTCTCTAGGGGTCATCCAATACCCCAGCTCTGACC
AGTTGTTCCCCTGCTAGCCCAGTTGGCCTCTGATTTTAGGAGAAGCCAGAAGTCCAGATTTTTCTGTGAG
CTCTCCTTAGTTGACCACATTGGAAGCAAACTTTTAAATGCTGTGTATGCGTGGCCCAAGCAAAACACAT
CTGGAGGCCAGATTGAATCCACAGGCTGAAAGCAGTCAACCAGGCCTGATGTCATGACCCTGTATCCTCT
CCACTGGCAGGAAGAGATGTCAGGAGAAAGTGTGGTGAGCTCAGCGGTGCCAGCGGCTGCTACCCGCACC
ACTTCCTTCAAGGGCACGAGCCCCAGCTCCAAATACGTGAAGCTGAATGTGGGTGGAGCCCTCTACTATA
CCACCATGCAGACGCTGACCAAGCAGGACACCATGCTGAAGGCCATGTTCAGCGGGCGCATGGAAGTGCT
CACCGACAGTGAAGGCTGGATCCTCATTGACCGCTGTGGGAAGCACTTTGGTACGATACTCAACTACCTT
CGAGACGGGGCGGTGCCTTTACCCGAGAGCCGCCGGGAGATCGAGGAGCTGCTAGCAGAAGCCAAGTACT
ACCTAGTCCAAGGCCTGGTGGAAGAGTGCCAGGCGGCCCTACAACAGAACAAAGATACTTATGAGCCTTT
CTGCAAGGTCCCTGTGATCACCTCATCCAAGGAAGAACAAAAACTTATAGCGACTTCAAATAAGCCAGCC
GTGAAGTTGCTCTACAACAGAAGTAACAACAAATACTCATATACCAGCAATTCTGACGACAATATGTTGA
AAAACATTGAACTGTTTGATAAGCTGTCTCTGCGCTTTAACGGAAGGGTCCTGTTCATAAAGGATGTCAT
TGGGGATGAAATCTGCTGCTGGTCCTTTTATGGTCAGGGCCGGAAGATTGCTGAAGTCTGTTGTACCTCC
ATCGTCTATGCCACTGAGAAGAAACAGACCAAGGTGGAGTTTCCCGAAGCCCGGATTTATGAGGAGACCC
TGAACATTTTGCTGTATGAGGCCCAGGATGGCCGGGGACCTGACAATGCGCTCCTGGAGGCCACAGGCGG
GGCGGCGGGGCGCTCCCACCACCTGGACGAGGACGAGGAGCGGGAGCGGATCGAGCGCGTGCGGAGGATC
CACATCAAGCGCCCTGATGACCGGGCCCACCTCCACCAGTGAGCAGGCAAGAGACCGAGCCGCCCTCCTC
TCACCGCCCCCACTCCCTGCCGTGCTACACCCAGATCCTGTGCAGGCTGCCGGGCCCCTTCTGCTTCCCT
TGGAGCCTGGAGATACTTTTGTAACAAGCCAGATGATTATTTTGGTATTGCTTGACAAGGCAAATTGATT
GTCTTGACCCAGGCGTATGACCCCTGTCGTTGAACAAGCTGTGTCTAAGATCTCTACTTTTCATGAGAAT
CTGAGACTCTTTGGAGCCAGGCTTTCTCGGTTCTCAGAGGAAAAGTATGAATGAGTGTGAAGTGTATGTG

Human MSTP028 mRNA sequence - var5 (public gi: 21750697) (SEQ ID NO: 94)

GCTGGCGTGAGCTGGGTGTTTCCTGCCTCTCTCAGTCCGGGTTTGGAGACTCCTGCGTCCTCCGACTTTT
CATGGAAGAGATGTCAGGAGAAAGTGTGGTGAGCTCAGCGGTGCCAGCGGCTGCTACCCGCACCACTTCC
TTCAAGGGCACGAGCCCCAGCTCCAAATACGTGAAGCTGAATGTGGGTGGAGCCCTCTACTATACCACCA
TGCAGACGCTGACCAAGCAGGACACCATGCTGAAGGCCATGTCCAGCGGGCGCATGGAAGTGCTCACCGA
CAGTGAAGAACAAAGATACTTATGAGCCTTTCTGCAAGGTCCCTGTGATCACCTCATCCAAGGAAGAACA
AAAACTTATAGCGACTTCAAATAAGCCAGCCGTGAAGTTGCTCTACAACAGAAGTAACAACAAATACTCA
TATACCAGCGATTCTGACGACAATATGTTGAAAAACATTGAACTGTTTGATAAGCTGTCTCTGCGCTTTA
ACGGAAGGGTCCTGTTCATAAAGGATGTTATTGGGGATGAAATCTGCTGCTGGTCCTTTTATGGTCAGGG
CCGGAAGATTGCTGAAGTCTGTTGTACCTCCATCGTCTATGCCACTGAGAAGAAACAGACCAAGGTGGAG
TTTCCCGAAGCCCGGATTTATGAGGAGACCCTGAACATTTTGCTGTATGAGGCCCAGGGTGGCCGGGGAC
CTGACAATGCGCTCCTGGAGGCCACAGGCGGGGCGGCGGGGCGCTCCCACCACCTGGACGAGGACGAGGA
GCGGGAGCGGATCGAGCGCGTGCGGAGGATCCACATCAAGCGCCCTGATGACCGGGCCCACCTCCACCAG
TGAGCAGGCAAGAGACCGAGCCGCCCTCCTCTCACCGCCCCCACTCCCTGCCGTGCTACACCCAGATCCT
GTGCAGGCTGCCGGGCCCCTTCTGCTTCCCTTGGAGCCTGGAGATACTTTTGTAACAAGCCAGATGATTA
TTTTGGTATTGCTTGACAAGGCAAATTGATTGTCTTGACCCAGGCGTATGACCCCTGTCGTTGAACAAGC
TGTGTCTAAGATCTCTACTTTTCATGAGAATCTGAGACTCTTTGGAGCCAGGCTTTCTCGGTTCTCAGAG
GAAAAGTATGAATGAGTGTGAAGTGTATGTGAGAACTTTTGTTTGCAATATTTATTTTTGTGGGTGTCGA
CTTCCTGTGTGGGCTTTTTGGGTGACACTCCCTTAAGGGTTCAGTTTGACAATTCTGAGAGTTGTCCTGC
AGTTGGAGGCCACCAGAGGTATCTGAGCTCCCTGCTTCCTATTTCATAATCCTCCAGCCCCAGCAGGTCC
ACTCCTGGTTCCTGTGTGTTTGGCCCGGGCACAATCCCCACTGCTTTGCTAGACGTGCTTTCTGCCATGT
GGCTTTGGGCCTAGAGCTTGTTGATAATTGCAGCTTGTGGCAGTGGAAATATGGCTGAATGAGCGTCTAA
ATCGTTGAGACCAGTGCAACTTTGGGTGCAAGGCTTTGTTTAGGGATCAAGCCTTTTGCCACCTTGGGCT
GGTCTTTGGCCTGGTGCTCACTGGGACCCCATATGTCTGCGTAGGAGCAGAACTTTCCATGGCAGTAAGT
GTCCAGCTCTGTTTCTGGTTCTTTCCCCAACTCCAGCCCCGTCCAGTTGTTCTCCTGATTGACCCGACTC
CACTCCAGGAAGGCCATCTGACCCTGTGACAGGCATAGCTCATAAACTACCCCTCCCTGGGATCCCGCTC
CTCTTCAGCCTCCTTCCCCATGAAGCTGGGCTAACTTTCTAAGTCATTTTGCTTAGAAATTCAGTGTGGC
CCATACCCTTTGTCCTCCCAGCCTGGCATCCAGGCAGGGACACCCTCACACCACCAGCCCCAGGGAGCTT
CCCTGCTATAAACACAGACCCCCTTGTCTTTGCCTCTGATTTTTACACAGTGTAGAGTGGCCAGCAGTGA
ACAGGTTGAGGATGTGCGGGTAGATAGATAACTTTGGGTCTGGTTTGTGTCTGTGTTCATGTTTGTTTAA
GGGATATGTGTGACTGTGGGTGGGGACGTGTGCTTGTGGGGCACAGGTGGCGGCCCCTGCTGGAGCCTGG
CTGGGCGCAGCGCCTATGTAGGACGGGTGTTCTCAGTGACCTACCTCCCAGGCTCCTCTGCACCTGCAAA
GGAACAGGAGTGAGTCGTGACTGACAGGGGTGGTTGAGACTAGACTAGGTAGAGTAGTTACCAGGAGATG

Figure 36 part - 51

TGAATGTGCGTCAGGTGATGGATGGGTTTGTCAAGGGAATCGTTACCGTTTTATACCAAAGGTATTAACA
TGGGCAGCCTTTGACACATGTATTCCAAAAACGAGTTTATATTTTCAAACGGTTTTTACAGCTTAGACTT
TGTACTTACTGCCCTGCCTGTGACAGTTGTATGCCTTCATTTTGTATCCAACAGCAAAGTCTACAATAAA
ACTTTAAAACAATCATG

Human MSTP028 Protein sequence - var1 (public gi: 13994353) (SEQ ID NO: 255)
MEEMSGESVVSSAVPAAATRTTSFKGTSPSSKYVKLNVGGALYYTTMQTLTKQDTMLKAMFSGRMEVLTD
SEGWILIDRCGKHFGTILNYLRDGAVPLPESRREIEELLAEAKYYLVQGLVEECQAALQNKDTYEPFCKV
PVITSSKEEQKLIATSNKPAVKLLYNRSNNKYSYTSNSDDNMLKNIELFDKLSLRFNGRVLFIKDVIGDE
ICCWSFYGQGRKIAEVCCTSIVYATEKKQTKVEFPEARIYEETLNILLYEAQDGRGPDNALLEATGGAAG
RSHHLDEDEERERIERVRRIHIKRPDDRAHLHQ

Human MSTP028 Protein sequence - var2 (public gi: 14042295) (SEQ ID NO: 256)
MSGESVVSSAVPAAATRTTSFKGTSPSSKYVKLNVGGALYYTTMQTLTKQDTMLKAMFSGRMEVLTDSEG
WILIDRCGKHFGTILNYLRDGAVPLPESRREIEELLAEAKYYLVQGLVEECQAALQNKDTYEPFCKVPVI
TSSKEEQKLIATSNKPAVKLLYNRSNNKYSYTSNSDDNMLKNIELFDKLSLRFNGRVLFIKDVIGDEICC
WSFYGQGRKIAEVCCTSIVYATEKKQTKVEFPEARIYEETLNILLYEAQDGRGPDNALLEATGGAAGRSH
HLDEDEERERIERVRRIHIKRPDDRAHLHQ

Unigene Name: PACS-1 Unigene ID: Hs.58589

Human PACS-1 mRNA sequence - var1 (public gi: 27781345) (SEQ ID NO: 95)
AGCACGAGTCTGGTTGTGCCGGAGAAAGTCAAAACTCCCATGAAGTCCAGTAAAACGGATCTCCAGGGCT
CTGCCTCCCCCAGCAAAGTGGAGGGGGTGCACACACCCCGGCAGAAGAGGAGCACGCCCCTGAAGGAGCG
GCAGCTCTCCAAGCCCCTAAGTGAGAGGACCAACAGTTCCGACAGCGAGCGCTCCCCAGATCTGGGCCAC
AGCACGCAGATTCCAAGAAAGGTGGTGTATGACCAGCTCAATCAGATCCTGGTGTCAGATGCAGCCCTCC
CAGAAAATGTCATTCTGGTGAACACCACTGACTGGCAGGGCCAGTATGTGGCTGAGCTGCTCCAGGACCA
GCGGAAGCCTGTGGTGTGCACCTGCTCCACCGTGGAGGTCCAGGCCGTGCTGTCCGCCCTGCTCACCCGG
ATCCAGCGCTACTGCAACTGCAACTCTTCCATGCCGAGGCCAGTGAAGGTGGCTGCTGTGGGAGGCCAGA
GCTACCTGAGCTCCATCCTCAGGTTCTTTGTCAAGTCCCTGGCCAACAAGACCTCCGACTGGCTTGGCTA
CATGCGCTTCCTCATCATCCCCCTCGGTTCTCACCCTGTGGCCAAATACTTGGGGTCAGTCGACAGTAAA
TACAGTAGTTCCTTCCTGGATTCTGGTTGGAGAGATCTGTTCAGTCGCTCGGAGCCACCAGTGTCAGAGC
AACTGGACGTGGCAGGGCGGGTGATGCAGTACGTCAACGGGGCAGCCACGACACACCAGCTTCCCGTGGC
CGAAGCCATGCTGACTTGCCGGCATAAGTTCCCTGATGAAGACTCCTATCAGAAGTTTATTCCCTTCATT
GGCGTGGTGAAGGTGGGTCTGGTTGAAGACTCTCCCTCCACAGCAGGCGATGGGGACGATTCTCCTGTGG
TCAGCCTTACTGTGCCCTCCACATCACCACCCTCCAGCTCGGGCCTGAGCCGAGACGCCACGGCCACCCC
TCCCTCCTCCCCATCTATGAGCAGCGCCCTGGCCATCGTGGGGAGCCCTAATAGCCCATATGGGGACGTG
ATTGGCCTCCAGGTGGACTACTGGCTGGGCCACCCCGGGGAGCGGAGGAGGGAAGGCGACAAGAGGGACG
CCAGCTCGAAGAACACCCTCAAGAGTGTCTTCCGCTCAGTGCAGGTGTCCCGCCTGCCCCATAGTGGGGA
GGCCCAGCTTTCTGGCACCATGGCCATGACTGTGGTCACCAAAGAAAAGAACAAGAAAGTTCCCACCATC
TTCCTGAGCAAGAAACCCCGAGAAAAGGAGGTGGATTCTAAGAGCCAGGTCATTGAAGGCATCAGCCGCC
TCATCTGCTCAGCCAAGCAGCAGCAGACTATGCTGAGAGTGTCCATCGATGGGGTCGAGTGGAGTGACAT
CAAGTTCTTCCAGCTGGCAGCCCAGTGGCCCACCCATGTCAAGCACTTTCCAGTGGGACTCTTCAGTGGC
AGCAAGGCCACCTGAGGCCCTGTCTCCCAGCCACTTTCCCTCCTGGCACTGCCACCAGCCTCACCGCCTG
CGGGCAGGGGGAGGCCAGCAGGCCCGGGCCCAGCACCCCTTCCCTGGCACCAGGGTCTGCCTCTCACTCG
CCCAGGTCCCGAAGGACACTGCCACAGGGACGCCTTCCCTCCCCTCCCCTCCAGCCCACCCCTGCACAGC
CCCTCCTCCTTCCCGCTTTTCCCCTTCTCCCTCCTGCTCCAGGCCCAAGGCGTGTTGGTTTTGCCTTCTG
GTGCCCATAGTCCCCTGGACTGAGTCCCCCAGGCCTTCCTTCACCCGACTTCCAAACTCTTCCTTGTGGT
ATCAGTTTCCTTCTCGGAAATGAGAAAGCTGGAATCCTGGTCCCCAGCAGGAGAGCCTAGTCCTCCCCCA
GCCCCTCCAGCCACCAGGGTGTCCTCTAGGATGCAGCTGCCAGATCCACTCACTCTGCTGCCTCCAGCAG
GACCCAAGGCCACTTTCAACTCTTATGGGGTTCTCCACCTGCCCCAGAGCTTCTCAAGGGAGGGTAAGGG
GGCACCCTGAGCCCACAGGACCCCTACTTCACAGCTCACAGGGGCAGGAGGCAGCTCCCCTGCCTCCAGG
ACCCTGTTGCTATGGTGACACAGCGTTTCTAGGACAGAGGGGCCTCCCAGTCTCCCCCCACCACCCGTGC
ACGACTTCCTCACCACCCCCAGGTTCCCTGCAGATGTCGTGTGTGTCCTGAGTGTTTCTTTGGTTCTTTG
CACGCCAAGTCTCTTGGTTGTACCATGTGACACACCCTGTGCACTGGTCGCTGTCTTCGTGGCTTCCACC
CTTGTTAATGATGCTCCTGCCTCTGCCTCCCAGCCCCTCACCCAGCACAGCTCTGCCTGGACTTGGAGAG
ATGGGAGGCAGACCCCCACCACCATACATGCTGTCTGTGGCCCCTCAGACATTCTGTTTCATCTCCCATT
CATCTCCCTCCTCCCACCGTGTCAGTTTTTCTGCCTTTCCCTGCTCTGTTCTTCCCCCTCCTTAGGCCCC
AGCCTGGGCCCAGACCCATCCTCCCAGCCAGGTTTCCCTCCAGCAGGCTCCTTCCCTCCCTGTCACCTCC
CTCTCACCAACCCGGGGTCTGAGCCCCTCATTCCTGACCGTCCGTGTTCTCAGGAGTGGTTGAGGACACA
GGGCCCCAGCCCAGCCCTCTGCACCCCCCAGCCCGGCCATCTGCGCCCCACAGCCCCTTTGGAGCTTTTC
TCTTGTCCTCTCACTCCTTCCCAGAAGTTTTTGCACAGAACTTCATTTTGAAAGTGTTTTTCTCATTCTC

Figure 36 part - 52

CATACCTCCCCCAAGCTCTCCTCCAGCCCTTCCCAGGGCTCAGCCCTGCTGTCCTGAGCGTCTCCTGGGC
CAGAGAGAGGAGATGGGGGTGGGAGGGACTGAGTTGATGTTGGGTTTTTCATTCAATAAATTGGTGATTT
CTTAAAAAAAAAAAAAAAAAA

Human PACS-1 mRNA sequence - var2 (public gi: 30962845) (SEQ ID NO: 96)

CCTCGGCCTCCGTAACCCCCGCCTAGCCGGGCCATGGCGGAACGCGGAGGGGCGGGCGGTGGTCCCGGAG
GCGCCGGGGGCGGCAGCGGCCAGCGGGGATCCGGGGTCGCCCAGTCCCCTCAGCAGCCGCCGCCGCAGCA
GCAGCAGCAGCAGCCGCCGCAGCAGCCGACGCCCCCCAAGCTGGCCCAGGCCACCTCGTCGTCCTCGTCC
ACCTCGGCGGCGGCTGCCTCCTCCTCGTCCTCGTCTACCTCCACCTCCATGGCCGTGGCGGTGGCCTCGG
GCTCCGCGCCTCCCGGTGGCCCGGGGCCAGGCCGCACCCCCGCCCCGGTGCAGATGAACCTGTACGCCAC
CTGGGAGGTGGACCGGAGCTCGTCCAGCTGCGTGCCTAGGCTATTCAGCTTGACCCTGAAGAAACTCGTC
ATGCTAAAAGAAATGGACAAAGATCTTAACTCAGTGGTCATCGCTGTGAAGCTGCAGGGTTCAAAAAGAA
TTCTTCGCTCCAACGAGATCGTCCTTCCAGCTAGTGGACTGGTGGAAACAGAGCTCCAATTAACCTTCTC
CCTTCAGTACCCTCATTTCCTTAAGCGAGATGCCAACAAGCTGCAGATCATGCTGCAAAGGAGAAAACGT
TACAAGAATCGGACCATCTTGGGCTATAAGACCTTGGCCGTGGGACTCATCAACATGGCAGAGGTGATGC
AGCATCCTAATGAAGGCGCACTGGTGCTTGGCCTACACAGCAACGTGAAGGATGTCTCTGTGCCTGTGGC
AGAAATAAAGATCTACTCCCTGTCCAGCCAACCCATTGACCATGAAGGAATCAAATCCAAGCTTTCTGAT
CGTTCTCCTGATATTGACAATTATTCTGAGGAAGAGGAAGAGAGTTTCTCATCAGAACAGGAAGGCAGTG
ATGATCCATTGCATGGGCAGGACTTGTTCTACGAAGACGAAGATCTCCGGAAAGTGAAGAAGACCCGGAG
GAAACTAACCTCAACCTCTGCCATCACAAGGCAACCTAACATCAAACAGAAGTTTGTGGCCCTCCTGAAG
CGGTTTAAAGTTTCAGATGAGGTGGGCTTTGGGCTGGAGCATGTGTCCCGCGAGCAGATCCGGGAAGTGG
AAGAGGACTTGGATGAATTGTATGACAGTCTGGAGATGTACAACCCCAGCGACAGTGGCCCTGAGATGGA
GGAGACAGAAAGCATCCTCAGCACGCCAAAGCCCAAGCTCAAGCCTTTCTTTGAGGGGATGTCGCAGTCC
AGCTCCCAGACGGAGATTGGCAGCCTCAACAGCAAAGGCAGCCTCGGAAAAGACACCACCAGCCCTATGG
AATTGGCTGCTCTAGAAAAAATTAAATCTACTTGGATTAAAAACCAAGATGACAGCTTGACTGAAACAGA
CACTCTGGAAATCACTGACCAGGACATGTTTGGAGATGCCAGCACGAGTCTGGTTGTGCCGGAGAAAGTC
AAAACTCCCATGAAGTCCAGTAAAACGGATCTCCAGGGCTCTGCCTCCCCCAGCAAAGTGGAGGGGGTGC
ACACACCCCGGCAGAAGAGGAGCACGCCCCTGAAGGAGCGGCAGCTCTCCAAGCCCCTAAGTGAGAGGAC
CAACAGTTCCGACAGCGAGCGCTCCCCAGATCTGGGCCACAGCACGCAGATTCCAAGAAAGGTGGTGTAT
GACCAGCTCAATCAGATCCTGGTGTCAGATGCAGCCCTCCCAGAAAATGTCATTCTGGTGAACACCACTG
ACTGGCAGGGCCAGTATGTGGCTGAGCTGCTCCAGGACCAGCGGAAGCCTGTGGTGTGCACCTGCTCCAC
CGTGGAGGTCCAGGCCGTGCTGTCCGCCCTGCTCACCCGGATCCAGCGCTACTGCAACTGCAACTCTTCC
ATGCCGAGGCCAGTGAAGGTGGCTGCTGTGGGAGGCCAGAGCTACCTGAGCTCCATCCTCAGGTTCTTTG
TCAAGTCCCTGGCCAACAAGACCTCCGACTGGCTTGGCTACATGCGCTTCCTCATCATCCCCCTCGGTTC
TCACCCTGTGGCCAAATACTTGGGGTCAGTCGACAGTAAATACAGTAGTTCCTTCCTGGATTCTGGTTGG
AGAGATCTGTTCAGTCGCTCGGAGCCACCAGTGTCAGAGCAACTGGACGTGGCAGGGCGGGTGATGCAGT
ACGTCAACGGGGCAGCCACGACACACCAGCTTCCCGTGGCCGAAGCCATGCTGACTTGCCGGCATAAGTT
CCCTGATGAAGACTCCTATCAGAAGTTTATTCCCTTCATTGGCGTGGTGAAGGTGGGTCTGGTTGAAGAC
TCTCCCTCCACAGCAGGCGATGGGGACGATTCTCCTGTGGTCAGCCTTACTGTGCCCTCCACATCACCAC
CCTCCAGCTCGGGCCTGAGCCGAGACGCCACGGCCACCCCTCCCTCCTCCCCATCTATGAGCAGCGCCCT
GGCCATCGTGGGGAGCCCTAATAGCCCATATGGGGACGTGATTGGCCTCCAGGTGGACTACTGGCTGGGC
CACCCCGGGGAGCGGAGGAGGGAAGGCGACAAGAGGGACGCCAGCTCGAAGAACACCCTCAAGAGTGTCT
TCCGCTCAGTGCAGGTGTCCCGCCTGCCCCATAGTGGGGAGGCCCAGCTTTCTGGCACCATGGCCATGAC
TGTGGTCACCAAAGAAAAGAACAAGAAAGTTCCCACCATCTTCCTGAGCAAGAAACCCCGAGAAAAGGAG
GTGGATTCTAAGAGCCAGGTCATTGAAGGCATCAGCCGCCTCATCTGCTCAGCCAAGCAGCAGCAGACTA
TGCTGAGAGTGTCCATCGATGGGGTCGAGTGGAGTGACATCAAGTTCTTCCAGCTGGCAGCCCAGTGGCC
CACCCATGTCAAGCACTTTCCAGTGGGACTCTTCAGTGGCAGCAAGGCCACCTGAGGCCCTGTCTCCCAG
CCACTTTCCCTCCTGGCACTGCCACCAGCCTCACCGCCTGCGGGCAGGGGGAGGCCAGCAGGCCCGGGCC
CAGCACCCCTTCCCTGGCACCAGGGTCTGCCTCTCACTCGCCCAGGTCCCGAAGGACACTGCCACAGGGA
CGCCTTCCCTCCCCTCCCCTCCAGCCCACCCCTGCACAGCCCCTCCTCCTTCCCGCTTTTCCCCTTCTCC
CTCCTGCTCCAGGCCCAAGGCGTGTTGGTTTTGCCTTCTGGTGCCCATAGTCCCCTGGACTGAGTCCCCC
AGGCCTTCCTTCACCCGACTTCCAAACTCTTCCTTGTGGTATCAGTTTCCTTCTCGGAAATGAGAAAGCT
GGAATCCTGGTCCCCAGCAGGAGAGCCTAGTCCTCCCCCAGCCCCTCCAGCCACCAGGGTGTCCTCTAGG
ATGCAGCTGCCAGATCCACTCACTCTGCTGCCTCCAGCAGGACCCAAGGCCACTTTCAACTCTTATGGGG
TTCTCCACCTGCCCCAGAGCTTCTCAAGGGAGGGTAAGGGGGCACCCTGAGCCCACAGGACCCCTACTTC
ACAGCTCACAGGGGCAGGAGGCAGCTCCCCTGCCTCCAGGACCCTGTTGCTATGGTGACACAGCGTTTCT
AGGACAGAGGGGCCTCCCAGTCTCCCCCCACCACCCGTGCACGACTTCCTCACCACCCCCAGGTTCCCTG
CAGATGTCGTGTGTGTCCTGAGTGTTTCTTTGGTTCTTTGCACGCCAAGTCTCTTGGTTGTACCATGTGA
CACACCCTGTGCACTGGTCGCTGTCTTCGTGGCTTCCACCCTTGTTAATGATGCTCCTGCCTCTGCCTCC
CAGCCCCTCACCCAGCACAGCTCTGCCTGGACTTGGAGAGATGGGAGGCAGACCCCCACCACCATACATG
CTGTCTGTGGCCCCTCAGACATTCTGTTTCATCTCCCATTCATCTCCCTCCTCCCACCGTGTCAGTTTTT
CTGCCTTTCCCTGCTCTGTTCTTCCCCCTCCTTAGGCCCCAGCCTGGGCCCAGACCCATCCTCCCAGCCA
GGTTTCCCTCCAGCAGGCTCCTTCCCTCCCTGTCACCTCCCTCTCACCAACCCGGGGTCTGAGCCCCTCA

Figure 36 part - 53

TTCCTGACCGTCCGTGTTCTCAGGAGTGGTTGAGGACACAGGGCCCCAGCCCAGCCCTCTGCACCCCCCA
GCCCGGCCATCTGCGCCCCACAGCCCCTTTGGAGCTTTTCTCTTGTCCTCTCACTCCTTCCCAGAAGTTT
TTGCACAGAACTTCATTTTGAAAGTGTTTTTCTCATTCTCCATACCTCCCCCAAGCTCTCCTCCAGCCCT
TCCCAGGGCTCAGCCCTGCTGTCCTGAGCGTCTCCTGGGCCAGAGAGAGGAGATGGGGGTGGGAGGGACT
GAGTTGATGTTGGGTTTTTCATTCAATAAATTGGTGATTTCTTACCGACAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAA

Human PACS-1 mRNA sequence - var3 (public gi: 33243994) (SEQ ID NO: 97)

CAGAAAGCATCCTCAGCACGCCAAAGCCCAAGCTCAAGCCTTTCTTTGAGGGGATGTCGCAGTCCAGCTC
CCAGACGGAGATTGGCAGCCTCAACAGCAAAGGCAGCCTCGGAAAAGACACCACCAGCCCTATGGAATTG
GCTGCTCTAGAAAAAATTAAATCTACTTGGATTAAAAACCAAGATGACAGCTTGACTGAAACAGACACTC
TGGAAATCACTGACCAGGACATGTTTGGAGATGCCAGCACGAGTCTGGTTGTGCCGGAGAAAGTCAAAAC
TCCCATGAAGTCCAGTAAAACGGATCTCCAGGGCTCTGCCTCCCCCAGCAAAGTGGAGGGGGTGCACACA
CCCCGGCAGAAGAGGAGCACGCCCCTGAAGGAGCGGCAGCTCTCCAAGCCCCTAAGTGAGAGGACCAACA
GTTCCGACAGCGAGCGCTCCCCAGATCTGGGCCACAGCACGCAGATTCCAAGAAAGGTGGTGTATGACCA
GCTCAATCAGATCCTGGTGTCAGATGCAGCCCTCCCAGAAAATGTCATTCTGGTGAACACCACTGACTGG
CAGGGCCAGTATGTGGCTGAGCTGCTCCAGGACCAGCGGAAGCCTGTGGTGTGCACCTGCTCCACCGTGG
AGGTCCAGGCCGTGCTGTCCGCCCTGCTCACCCGGATCCAGCGCTACTGCAACTGCAACTCTTCCATGCC
GAGGCCAGTGAAGGTGGCTGCTGTGGGAGGCCAGAGCTACCTGAGCTCCATCCTCAGGTTCTTTGTCAAG
TCCCTGGCCAACAAGACCTCCGACTGGCTTGGCTACATGCGCTTCCTCATCATCCCCCTCGGTTCTCACC
CTGTGGCCAAATACTTGGGGTCAGTCGACAGTAAATACAGTAGTTCCTTCCTGGATTCTGGTTGGAGAGA
TCTGTTCAGTCGCTCGGAGCCACCAGTGTCAGAGCAACTGGACGTGGCAGGGCGGGTGATGCAGTACGTC
AACGGGGCAGCCACGACACACCAGCTTCCCGTGGCCGAAGCCATGCTGACTTGCCGGCATAAGTTCCCTG
ATGAAGACTCCTATCAGAAGTTTATTCCCTTCATTGGCGTGGTGAAGGTGGGTCTGGTTGAAGACTCTCC
CTCCACAGCAGGCGATGGGGACGATTCTCCTGTGGTCAGCCTTACTGTGCCCTCCACATCACCACCCTCC
AGCTCGGGCCTGAGCCGAGACGCCACGGCCACCCCTCCCTCCTCCCCATCTATGAGCAGCGCCCTGGCCA
TCGTGGGGAGCCCTAATAGCCCATATGGGGACGTGATTGGCCTCCAGGTGGACTACTGGCTGGGCCACCC
CGGGGAGCGGAGGAGGGAAGGCGACAAGAGGGACGCCAGCTCGAAGAACACCCTCAAGAGTGTCTTCCGC
TCAGTGCAGGTGTCCCGCCTGCCCCATAGTGGGGAGGCCCAGCTTTCTGGCACCATGGCCATGACTGTGG
TCACCAAAGAAAAGAACAAGAAAGTTCCCACCATCTTCCTGAGCAAGAAACCCCGAGAAAAGGAGGTGGA
TTCTAAGAGCCAGGTCATTGAAGGCATCAGCCGCCTCATCTGCTCAGCCAAGCAGCAGCAGACTATGCTG
AGAGTGTCCATCGATGGGGTCGAGTGGAGTGACATCAAGTTCTTCCAGCTGGCAGCCCAGTGGCCCACCC
ATGTCAAGCACTTTCCAGTGGGACTCTTCAGTGGCAGCAAGGCCACCTGAGGCCCTGTCTCCCAGCCACT
TTCCCTCCTGGCACTGCCACCAGCCTCACCGCCTGCGGGCAGGGGGAGGCCAGCAGGCCCGGGCCCAGCA
CCCCTTCCCTGGCACCAGGGTCTGCCTCTCACTCGCCCAGGTCCCGAAGGACACTGCCACAGGGACGCCT
TCCCTCCCCTCCCCTCCAGCCCACCCCTGCACAGCCCCTCCTCCTTCCCGCTTTTCCCCTTCTCCCTCCT
GCTCCAGGCCCAAGGCGTGTTGGTTTTGCCTTCTGGTGCCCATAGTCCCCTGGACTGAGTCCCCCAGGCC
TTCCTTCACCCGACTTCCAAACTCTTCCTTGTGGTATCAGTTTCCTTCTTGGAAATGAGAAAGCTGGAAT
CCTGGTCCCCAGCAGGAGAGCCTAGTCCTCCCCCAGCCCCTCCAGCCACCAGGGTGTCCTCTAGGATGCA
GCTGCCAGATCCACTCACTCTGCTGCCTCCAGCAGGACCCAAGGCCACTTTCAACTCTTATGGGGTTCTC
CACCTGCCCCAGAGCTTCCCAAGGGAGGGTAAGGGGGCACCCTGAGCCCACAGGACCCCTACTTCACAGC
TCACAGGGGCAGGAGGCAGCTCCCCTGCCTCCAGGACCCTGTTGCTATGGTGACACAGCGTTTCTAGGAC
AGAGGGGCCTCCCAGTCTCCCCCCACCACCCGTGCACGACTTCCTCACCACCCCCAGGTTCCCTGCAGAT
GTCGTGTGTGTCCTGAGTGTTTCTTTGGTTCTTTGCACGCCAAGTCTCTTGGTTGTACCATGTGACACAC
CCTGTGCACTGGTCGCTGTCTTCGTGGCTTCCACCCTTGTTAATGATGCTCCTGCCTCTGCCTCCCAGCC
CCTCACCCAGCACAGCTCTGCCTGGACTTGGAGAGATGGGAGGCAGACCCCCACCACCATACATGCTGTC
TGTGGCCCCTCAGACATTCTGTTTCATCTCCCATTCATCTCCCTCCTCCCACCGTGTCAGTTTTTCTGCC
TTTCCCTGCTCTGTTCTTCCCCCTCCTTAGGCCCCAGCCTGGGCCCAGACCCATCCTCCCAGCCAGGTTT
CCCTCCAGCAGGCTCCTTCCCTCCCTGTCACCTCCCTCTCACCAACCCGGGGTCTGAGCCCCTCATTCCT
GACCGTCCGTGTTCTCAGGAGTGGTTGAGGACACAGGGCCCCAGCCCAGCCCTCTGCACCCCCCAGCCCG
GCCATCTGCGCCCCACAGCCCCTTTGGAGCTTTTCTCTTGTCCTCTCACTCCTTCCCAGAAGTTTTTGCA
CAGAACTTCATTTTGAAAGTGTTTTTCTCATTCTCTATACCTCCCCCAAGCTCTCCTCCAGCCCTTCCCA
GGGCTCAGCCCTGCTGTCCTGAGCGTCTCCTGGGCCAGAGAGAGGAGATGGGGGTGGGAGGGACTGAGTT
GATGTTGGGTTTTTCATTCAATAAATTGGTGATTTCTTACCGACAAAAAAAAAAAAAAA

Human PACS-1 mRNA sequence - var4 (public gi: 34420884) (SEQ ID NO: 98)

CGCCGCCGCCGCCGCGGGGGAAGCCTGGGAGCCAGATCGGCGTCGCCTCGGCCTCCGTAACCCCCGCCTA
GCCGGGCCATGGCGGAACGCGGAGGGGCGGGCGGTGGTCCCGGAGGCGCCGGGGGCGGCAGCGGCCAGCG
GGGATCCGGGGTCGCCCAGTCCCCTCAGCAGCCGATGGCGGAACGCGGAGGGGCGGGCGGTGGTCCCGGA
GGCGCCGGGGGCGGCAGCGGCCAGCGGGGATCCGGGGTCGCCCAGTCCCCTCAGCAGCCGCCGCCGCAGC
AGCAGCAGCAGCAGCCGCCGCAGCAGCCGACGCCCCCCAAGCTGGCCCAGGCCACCTCGTCGTCCTCGTC
CACCTCGGCGGCGGCTGCCTCCTCCTCGTCCTCGTCTACCTCCACCTCCATGGCCGTGGCGGTGGCCTCG

Figure 36 part - 54

GGCTCCGCGCCTCCCGGTGGCCCGGGGCCAGGCCGCACCCCCGCCCCGGTGCAGATGAACCTGTACGCCA
CCTGGGAGGTGGACCGGAGCTCGTCCAGCTGCGTGCCTAGGCTATTCAGCTTGACCCTGAAGAAACTCGT
CATGCTAAAAGAAATGGACAAAGATCTTAACTCAGTGGTCATCGCTGTGAAGCTGCAGGGTTCAAAAAGA
ATTCTTCGCTCCAACGAGATCGTCCTTCCAGCTAGTGGACTGGTGGAAACAGAGCTCCAATTAACCTTCT
CCCTTCAGTACCCTCATTTCCTTAAGCGAGATGCCAACAAGCTGCAGATCATGCTGCAAAGGAGAAAACG
TTACAAGAATCGGACCATCTTGGGCTATAAGACCTTGGCCGTGGGACTCATCAACATGGCAGAGGTGATG
CAGCATCCTAATGAAGGCGCACTGGTGCTTGGCCTACACAGCAACGTGAAGGATGTCTCTGTGCCTGTGG
CAGAAATAAAGATCTACTCCCTGTCCAGCCAACCCATTGACCATGAAGGAATCAAATCCAAGCTTTCTGA
TCGTTCTCCTGATATTGACAATTATTCTGAGGAAGAGGAAGAGAGTTTCTCATCAGAACAGGAAGGCAGT
GATGATCCATTGCATGGGCAGGACTTGTTCTACGAAGACGAAGATCTCCGGAAAGTGAAGAAGACCCGGA
GGAAACTAACCTCAACCTCTGCCATCACAAGGCAACCTAACATCAAACAGAAGTTTGTGGCCCTCCTGAA
GCGGTTTAAAGTTTCAGATGAGGTGGGCTTTGGGCTGGAGCATGTGTCCCGCGAGCAGATCCGGGAAGTG
GAAGAGGACTTGGATGAATTGTATGACAGTCTGGAGATGTACAACCCCAGCGACAGTGGCCCTGAGATGG
AGGAGACAGAAAGCATCCTCAGCACGCCAAAGCCCAAGCTCAAGCCTTTCTTTGAGGGGATGTCGCAGTC
CAGCTCCCAGACGGAGATTGGCAGCCTCAACAGCAAAGGCAGCCTCGGAAAAGACACCACCAGCCCTATG
GAATTGGCTGCTCTAGAAAAAATTAAATCTACTTGGATTAAAAACCAAGATGACAGCTTGACTGAAACAG
ACACTCTGGAAATCACTGACCAGGACATGTTTGGAGATGCCAGCACGAGTCTGGTTGTGCCGGAGAAAGT
CAAAACTCCCATGAAGTCCAGTAAAACGGATCTCCAGGGCTCTGCCTCCCCCAGCAAAGTGGAGGGGGTG
CACACACCCCGGCAGAAGAGGAGCACGCCCCTGAAGGAGCGGCAGCTCTCCAAGCCCCTAAGTGAGAGGA
CCAACAGTTCCGACAGCGAGCGCTCCCCAGATCTGGGCCACAGCACGCAGATTCCAAGAAAGGTGGTGTA
TGACCAGCTCAATCAGATCCTGGTGTCAGATGCAGCCCTCCCAGAAAATGTCATTCTGGTGAACACCACT
GACTGGCAGGGCCAGTATGTGGCTGAGCTGCTCCAGGACCAGCGGAAGCCTGTGGTGTGCACCTGCTCCA
CCGTGGAGGTCCAGGCCGTGCTGTCCGCCCTGCTCACCCGGATCCAGCGCTACTGCAACTGCAACTCTTC
CATGCCGAGGCCAGTGAAGGTGGCTGCTGTGGGAGGCCAGAGCTACCTGAGCTCCATCCTCAGGTTCTTT
GTCAAGTCCCTGGCCAACAAGACCTCCGACTGGCTTGGCTACATGCGCTTCCTCATCATCCCCCTCGGTT
CTCACCCTGTGGCCAAATATTTGGGGTCAGTCGACAGTAAATACAGTAGTTCCTTCCTGGATTCTGGTTG
GAGAGATCTGTTCAGTCGCTCGGAGCCACCAGTGTCAGAGCAACTGGACGTGGCAGGGCGGGTGATGCAG
TACGTCAACGGGGCAGCCACGACACACCAGCTTCCCGTGGCCGAAGCCATGCTGACTTGCCGGCATAAGT
TCCCTGATGAAGACTCCTATCAGAAGTTTATTCCCTTCATTGGCGTGGTGAAGGTGGGTCTGGTTGAAGA
CTCTCCCTCCACAGCAGGCGATGGGGACGATTCTCCTGTGGTCAGCCTTACTGTGCCCTCCACATCACCA
CCCTCCAGCTCGGGCCTGAGCCGAGACGCCACGGCCACCCCTCCCTCCTCCCCATCTATGAACAGCGCCC
TGGCCATCGTGGGGAGCCCTAATAGCCCATATGGGGACGTGATTGGCCTCCAGGTGGACTACTGGCTGGG
CCACCCCGGGGAGCGGAGGAGGGAAGGCGACAAGAGGGACGCCAGCTCGAAGAACACCCTCAAGAGTGTC
TTCCGCTCAGTGCAGGTGTCCCGCCTGCCCCATAGTGGGGAGGCCCAGCTTTCTGGCACCATGGCCATGA
CTGTGGTCACCAAAGAACTGAACAAGAAAGTTCCCACCATCTTCCTGAGCAAGAAACCCCGAGAAAAGGA
GGTGGATTCTAAGAGCCAGGTCATTGAAGGCATCAGCCGCCTCATCTGCTCAGCCAAGCAGCAGCAGACT
ATGCTGAGAGTGTCCATCGATGGGGTCGAGTGGAGTGACATCAAGTTCTTCCAGCTGGCAGCCCAGTGGC
CCACCCATGTCAAGCACTTTCCAGTGGGACTCTTCAGTGGCAGCAAGGCCACCTAG

Human PACS-1 mRNA sequence - var5 (public gi: 6330230) (SEQ ID NO: 99)

CTGCCATCACAAGGCAACCTAACATCAAACAGAAGTTTGTGGCCCTCCTGAAGCGGTTTAAAGTTTCAGA
TGAGGTGGGCTTTGGGCTGGAGCATGTGTCCCGCGAGCAGATCCGGGAAGTGGAAGAGGACTTGGATGAA
TTGTATGACAGTCTGGAGATGTACAACCCCAGCGACAGTGGCCCTGAGATGGAGGAGACAGAAAGCATCC
TCAGCACGCCAAAGCCCAAGCTCAAGCCTTTCTTTGAGGGGATGTCGCAGTCCAGCTCCCAGACGGAGAT
TGGCAGCCTCAACAGCAAAGGCAGCCTCGGAAAAGACACCACCAGCCCTATGGAATTGGCTGCTCTAGAA
AAAATTAAATCTACTTGGATTAAAAACCAAGATGACAGCTTGACTGAAACAGACACTCTGGAAATCACTG
ACCAGGACATGTTTGGAGATGCCAGCACGAGTCTGGTTGTGCCGGAGAAAGTCAAAACTCCCATGAAGTC
CAGTAAAACGGATCTCCAGGGCTCTGCCTCCCCCAGCAAAGTGGAGGGGGTGCACACACCCCGGCAGAAG
AGGAGCACGCCCCTGAAGGAGCGGCAGCTCTCCAAGCCCCTAAGTGAGAGGACCAACAGTTCCGACAGCG
AGCGCTCCCCAGATCTGGGCCACAGCACGCAGATTCCAAGAAAGGTGGTGTATGACCAGCTCAATCAGAT
CCTGGTGTCAGATGCAGCCCTCCCAGAAAATGTCATTCTGGTGAACACCACTGACTGGCAGGGCCAGTAT
GTGGCTGAGCTGCTCCAGGACCAGCGGAAGCCTGTGGTGTGCACCTGCTCCACCGTGGAGGTCCAGGCCG
TGCTGTCCGCCCTGCTCACCCGGATCCAGCGCTACTGCAACTGCAACTCTTCCATGCCGAGGCCAGTGAA
GGTGGCTGCTGTGGGAGGCCAGAGCTACCTGAGCTCCATCCTCAGGTTCTTTGTCAAGTCCCTGGCCAAC
AAGACCTCCGACTGGCTTGGCTACATGCGCTTCCTCATCATCCCCCTCGGTTCTCACCCTGTGGCCAAAT
ACTTGGGGTCAGTCGACAGTAAATACAGTAGTTCCTTCCTGGATTCTGGTTGGAGAGATCTGTTCAGTCG
CTCGGAGCCACCAGTGTCAGAGCAACTGGACGTGGCAGGGCGGGTGATGCAGTACGTCAACGGGGCAGCC
ACGACACACCAGCTTCCCGTGGCCGAAGCCATGCTGACTTGCCGGCATAAGTTCCCTGATGAAGACTCCT
ATCAGAAGTTTATTCCCTTCATTGGCGTGGTGAAGGTGGGTCTGGTTGAAGACTCTCCCTCCACAGCAGG
CGATGGGGACGATTCTCCTGTGGTCAGCCTTACTGTGCCCTCCACATCACCACCCTCCAGCTCGGGCCTG
AGCCGAGACGCCACGGCCACCCCTCCCTCCTCCCCATCTATGAGCAGCGCCCTGGCCATCGTGGGGAGCC
CTAATAGCCCATATGGGGACGTGATTGGCCTCCAGGTGGACTACTGGCTGGGCCACCCCGGGGAGCGGAG
GAGGGAAGGCGACAAGAGGGACGCCAGCTCGAAGAACACCCTCAAGAGTGTCTTCCGCTCAGTGCAGGTG

Figure 36 part - 55

TCCCGCCTGCCCCATAGTGGGGAGGCCCAGCTTTCTGGCACCATGGCCATGACTGTGGTCACCAAAGAAA
AGAACAAGAAAGTTCCCACCATCTTCCTGAGCAAGAAACCCCGAGAAAAGGAGGTGGATTCTAAGAGCCA
GGTCATTGAAGGCATCAGCCGCCTCATCTGCTCAGCCAAGCAGCAGCAGACTATGCTGAGAGTGTCCATC
GATGGGGTCGAGTGGAGTGACATCAAGTTCTTCCAGCTGGCAGCCCAGTGGCCCACCCATGTCAAGCACT
TTCCAGTGGGACTCTTCAGTGGCAGCAAGGCCACCTGAGGCCCTGTCTCCCAGCCACTTTCCCTCCTGGC
ACTGCCACCAGCCTCACCGCCTGCGGGCAGGGGGAGGCCAGCAGGCCCGGGCCCAGCACCCCTTCCCTGG
CACCAGGGTCTGCCTCTCACTCGCCCAGGTCCCGAAGGACACTGCCACAGGGACGCCTTCCCTCCCCTCC
CCTCCAGCCCACCCCTGCACAGCCCCTCCTCCTTCCCGCTTTTCCCCTTCTCCCTCCTGCTCCAGGCCCA
AGGCGTGTTGGTTTTGCCTTCTGGTGCCCATAGTCCCCTGGACTGAGTCCCCCAGGCCTTCCTTCACCCG
ACTTCCAAACTCTTCCTTGTGGTATCAGTTTCCTTCTCGGAAATGAGAAAGCTGGAATCCTGGTCCCCAG
CAGGAGAGCCTAGTCCTCCCCCAGCCCCTCCAGCCACCAGGGTGTCCTCTAGGATGCAGCTGCCAGATCC
ACTCACTCTGCTGCCTCCAGCAGGACCCAAGGCCACTTTCAACTCTTATGGGGTTCTCCACCTGCCCCAG
AGCTTCCCAAGGGAGGGTAAGGGGGCACCCTGAGCCCACAGGACCCCTACTTCACAGCTCACAGGGGCAG
GAGGCAGCTCCCCTGCCTCCAGGACCCTGTTGCTATGGTGACACAGCGTTTCTAGGACAGAGGGGCCTCC
CAGTCTCCCCCCACCACCCGTGCACGACTTCCTCACCACCCCCAGGTTCCCTGCAGATGTCGTGTGTGTC
CTGAGTGTTTCTTTGGTTCTTTGCACGCCAAGTCTCTTGGTTGTACCATGTGACACACCCTGTGCACTGG
TCGCTGTCTTCGTGGCTTCCACCCTTGTTAATGATGCTCCTGCCTCTGCCTCCCAGCCCCTCACCCAGCA
CAGCTCTGCCTGGACTTGGAGAGATGGGAGGCAGACCCCCACCACCATACATGCTGTCTGTGGCCCCTCA
GACATTCTGTTTCATCTCCCATTCATCTCCCTCCTCCCACCGTGTCAGTTTTTCTGCCTTTCCCTGCTCT
GTTCTTCCCCCTCCTTAGGCCCCAGCCTGGGCCCAGACCCATCCTCCCAGCCAGGTTTCCCTCCAGCAGG
CTCCTTCCCTCCCTGTCACCTCCCTCTCACCAACCCGGGGTCTGAGCCCCTCATTCCTGACCGTCCGTGT
TCTCAGGAGTGGTTGAGGACACAGGGCCCCAGCCCAGCCCTCTGCACCCCCCAGCCCGGCCATCTGCGCC
CCACAGCCCCTTTGGAGCTTTTCTCTTGTCCTCTCACTCCTTCCCAGAAGTTTTTGCACAGAACTTCATT
TTGAAAGTGTTTTTCTCATTCTCCATACCTCCCCCAAGCTCTCCTCCAGCCCTTCCCAGGGCTCAGCCCT
GCTGTCCTGAGCGTCTCCTGGGCCAGAGAGAGGAGATGGGGGTGGGAGGGACTGAGTTGATGTTGGGTTT
TTCATTCAATAAATTGGTGATTTCTTACCG

Human PACS-1 mRNA sequence - var6 (public gi: 7022110) (SEQ ID NO: 100)

CCCTAAGTGAGAGGACCAACAGTTCCGACAGCGAGCGCTCCCCAGATCTGGGCCACAGCACGCAGATTCC
AAGAAAGGTGGTGTATGACCAGCTCAATCAGATCCTGGTGTCAGATGCAGCCCTCCCAGAAAATGTCATT
CTGGTGAACACCACTGACTGGCAGGGCCAGTATGTGGCTGAGCTGCTCCAGGACCAGCGGAAGCCTGTGG
TGTGCACCTGCTCCACCGTGGAGGTCCAGGCCGTGCTGTCCGCCCTGCTCACCCGGATCCAGCGCTACTG
CAACTGCAACTCTTCCATGCCGAGGCCAGTGAAGGTGGCTGCTGTGGGAGGCCAGAGCTACCTGAGCTCC
ATCCTCAGGTTCTTTGTCAAGTCCCTGGCCAACATGACCTCCGACTGGCTTGGCTACATGCGCTTCCTCA
TCATCCCCCTCGGTTCTCACCCTGTGGCCAAATACTTGGGGTCAGTCGACAGTAAATACAGTAGTTCCTT
CCTGGATTCTGGTTGGAGAGATCTGTTCAGTCGCTCGGAGCCACCAGTGTCAGAGCAACTGGACGTGGCA
GGGCGGGTGATGCAGTACGTCAACGGGGCAGCCACGACACACCAGCTTCCCGTGGCCGAAGCCATGCTGA
CTTGCCGGCATAAGTTCCCTGATGAAGACTCCTATCAGAAGTTTATTCCCTTCATTGGCGTGGTGAAGGT
GGGTCTGGTTGAAGACTCTCCCTCCACAGCAGGCGATGGGGACGATTCTCCTGTGGTCAGCCTTACTGTG
CCCTCCACATCACCACCCTCCAGCTCGGGCCTGAGCCGAGACGCCACGGCCACCCCTCCCTCCTCCCCAT
CTATGAGCAGCGCCCTGGCCATCGTGGGGAGCCCTAATAGCCCATATGGGGACGTGATTGGCCTCCAGGT
GGACTACTGGCTGGGCCACCCCGGGGAGCGGAGGAGGGAAGGCGACAAGAGGGACGCCAGCTCGAAGAAC
ACCCTCAAGAGTGTCTTCCGCTCAGTGCAGGTGTCCCGCCTGCCCCATAGTGGGGAGGCCCAGCTTTCTG
GCACCATGGCCATGACTGTGGTCACCAAAGAAAAGAACAAGAAAGTTCCCACCATCTTCCTGAGCAAGAA
ACCCCGAGAAAAGGAGGTGGATTCTAAGAGCCAGGTCATTGAAGGCATCAGCCGCCTCATCTGTTCTTCC
CCCTCCTTAGGCCCCAGCCTGGGCCCAGACCCATCCTCCCAGCCAGGTTTCCCTCCAGCAGGCTCCTTCC
CTCCCTGTCACCTCCCTCTCACCAACCCGGGGTCTGAGCCCCTCATTCCTGACCGTCCGTGTTCTCAGGA
GTGGTTGAGGACACAGGGCCCCAGCCCAGCCCTCTGCACCCCCCAGCCCGGCCATCTGCGCCCCACAGCC
CCTTTGGAGCTTTTCTCTTGTCCTCTCACTCCTTCCCAGAAGTTTTTGCACAGAACTTCATTTTGAAAGT
GTTTTTCTCATTCTCCATACCTCCCCCAAGCTCTCCTCCAGCCCTTCCCAGGGCTCAGCCCTGCTGTCCT
GAGCGTCTCCTGGGCCAGAGAGAGGAGATGGGGGTGGGAGGGACTGAGTTGATGTTGGGTTTTTCATTCA
ATAAATTGGTGATTTCTTACCGAC

Human PACS-1 protein sequence - var1 (public gi: 7022111) (SEQ ID NO: 362)

MPRPVKVAAVGGQSYLSSILRFFVKSLANMTSDWLGYMRFLIIPLGSHPVAKYLGSVDSKYSSSFLDSGW
RDLFSRSEPPVSEQLDVAGRVMQYVNGAATTHQLPVAEAMLTCRHKFPDEDSYQKFIPFIGVVKVGLVED
SPSTAGDGDDSPVVSLTVPSTSPPSSSGLSRDATATPPSSPSMSSALAIVGSPNSPYGDVIGLQVDYWLG
HPGERRREGDKRDASSKNTLKSVFRSVQVSRLPHSGEAQLSGTMAMTVVTKEKNKKVPTIFLSKKPREKE
VDSKSQVIEGISRLICSSPSLGPSLGPDPSSQPGFPPAGSFPPCHLPLTNPGSEPLIPDRPCSQEWLRTQ
GPSPALCTPQPGHLRPTAPLELFSCPLTPSQKFLHRTSF

Human PACS-1 protein sequence - var2 (public gi: 6330231) (SEQ ID NO: 363)

Figure 36 part - 56

AITRQPNIKQKFVALLKRFKVSDEVGFGLEHVSREQIREVEEDLDELYDSLEMYNPSDSGPEMEETESIL
STPKPKLKPFFEGMSQSSSQTEIGSLNSKGSLGKDTTSPMELAALEKIKSTWIKNQDDSLTETDTLEITD
QDMFGDASTSLVVPEKVKTPMKSSKTDLQGSASPSKVEGVHTPRQKRSTPLKERQLSKPLSERTNSSDSE
RSPDLGHSTQIPRKVVYDQLNQILVSDAALPENVILVNTTDWQGQYVAELLQDQRKPVVCTCSTVEVQAV
LSALLTRIQRYCNCNSSMPRPVKVAAVGGQSYLSSILRFFVKSLANKTSDWLGYMRFLIIPLGSHPVAKY
LGSVDSKYSSSFLDSGWRDLFSRSEPPVSEQLDVAGRVMQYVNGAATTHQLPVAEAMLTCRHKFPDEDSY
QKFIPFIGVVKVGLVEDSPSTAGDGDDSPVVSLTVPSTSPPSSSGLSRDATATPPSSPSMSSALAIVGSP
NSPYGDVIGLQVDYWLGHPGERRREGDKRDASSKNTLKSVFRSVQVSRLPHSGEAQLSGTMAMTVVTKEK
NKKVPTIFLSKKPREKEVDSKSQVIEGISRLICSAKQQQTMLRVSIDGVEWSDIKFFQLAAQWPTHVKHF
PVGLFSGSKAT

Human PACS-1 protein sequence - var3 (public gi: 34420885) (SEQ ID NO: 364)
MAERGGAGGGPGGAGGGSGQRGSGVAQSPQQPPPQQQQQQPPQQPTPPKLAQATSSSSSTSAAAASSSSS
STSTSMAVAVASGSAPPGGPGPGRTPAPVQMNLYATWEVDRSSSSCVPRLFSLTLKKLVMLKEMDKDLNS
VVIAVKLQGSKRILRSNEIVLPASGLVETELQLTFSLQYPHFLKRDANKLQIMLQRRKRYKNRTILGYKT
LAVGLINMAEVMQHPNEGALVLGLHSNVKDVSVPVAEIKIYSLSSQPIDHEGIKSKLSDRSPDIDNYSEE
EEESFSSEQEGSDDPLHGQDLFYEDEDLRKVKKTRRKLTSTSAITRQPNIKQKFVALLKRFKVSDEVGFG
LEHVSREQIREVEEDLDELYDSLEMYNPSDSGPEMEETESILSTPKPKLKPFFEGMSQSSSQTEIGSLNS
KGSLGKDTTSPMELAALEKIKSTWIKNQDDSLTETDTLEITDQDMFGDASTSLVVPEKVKTPMKSSKTDL
QGSASPSKVEGVHTPRQKRSTPLKERQLSKPLSERTNSSDSERSPDLGHSTQIPRKVVYDQLNQILVSDA
ALPENVILVNTTDWQGQYVAELLQDQRKPVVCTCSTVEVQAVLSALLTRIQRYCNCNSSMPRPVKVAAVG
GQSYLSSILRFFVKSLANKTSDWLGYMRFLIIPLGSHPVAKYLGSVDSKYSSSFLDSGWRDLFSRSEPPV
SEQLDVAGRVMQYVNGAATTHQLPVAEAMLTCRHKFPDEDSYQKFIPFIGVVKVGLVEDSPSTAGDGDDS
PVVSLTVPSTSPPSSSGLSRDATATPPSSPSMNSALAIVGSPNSPYGDVIGLQVDYWLGHPGERRREGDK
RDASSKNTLKSVFRSVQVSRLPHSGEAQLSGTMAMTVVTKELNKKVPTIFLSKKPREKEVDSKSQVIEGI
SRLICSAKQQQTMLRVSIDGVEWSDIKFFQLAAQWPTHVKHFPVGLFSGSKAT

Human PACS-1 protein sequence - var4 (public gi: 33243995) (SEQ ID NO: 365)
ESILSTPKPKLKPFFEGMSQSSSQTEIGSLNSKGSLGKDTTSPMELAALEKIKSTWIKNQDDSLTETDTL
EITDQDMFGDASTSLVVPEKVKTPMKSSKTDLQGSASPSKVEGVHTPRQKRSTPLKERQLSKPLSERTNS
SDSERSPDLGHSTQIPRKVVYDQLNQILVSDAALPENVILVNTTDWQGQYVAELLQDQRKPVVCTCSTVE
VQAVLSALLTRIQRYCNCNSSMPRPVKVAAVGGQSYLSSILRFFVKSLANKTSDWLGYMRFLIIPLGSHP
VAKYLGSVDSKYSSSFLDSGWRDLFSRSEPPVSEQLDVAGRVMQYVNGAATTHQLPVAEAMLTCRHKFPD
EDSYQKFIPFIGVVKVGLVEDSPSTAGDGDDSPVVSLTVPSTSPPSSSGLSRDATATPPSSPSMSSALAI
VGSPNSPYGDVIGLQVDYWLGHPGERRREGDKRDASSKNTLKSVFRSVQVSRLPHSGEAQLSGTMAMTVV
TKEKNKKVPTIFLSKKPREKEVDSKSQVIEGISRLICSAKQQQTMLRVSIDGVEWSDIKFFQLAAQWPTH
VKHFPVGLFSGSKAT

Human PACS-1 protein sequence - var5 (public gi: 30962846) (SEQ ID NO: 366)
MAERGGAGGGPGGAGGGSGQRGSGVAQSPQQPPPQQQQQQPPQQPTPPKLAQATSSSSSTSAAAASSSSS
STSTSMAVAVASGSAPPGGPGPGRTPAPVQMNLYATWEVDRSSSSCVPRLFSLTLKKLVMLKEMDKDLNS
VVIAVKLQGSKRILRSNEIVLPASGLVETELQLTFSLQYPHFLKRDANKLQIMLQRRKRYKNRTILGYKT
LAVGLINMAEVMQHPNEGALVLGLHSNVKDVSVPVAEIKIYSLSSQPIDHEGIKSKLSDRSPDIDNYSEE
EEESFSSEQEGSDDPLHGQDLFYEDEDLRKVKKTRRKLTSTSAITRQPNIKQKFVALLKRFKVSDEVGFG
LEHVSREQIREVEEDLDELYDSLEMYNPSDSGPEMEETESILSTPKPKLKPFFEGMSQSSSQTEIGSLNS
KGSLGKDTTSPMELAALEKIKSTWIKNQDDSLTETDTLEITDQDMFGDASTSLVVPEKVKTPMKSSKTDL
QGSASPSKVEGVHTPRQKRSTPLKERQLSKPLSERTNSSDSERSPDLGHSTQIPRKVVYDQLNQILVSDA
ALPENVILVNTTDWQGQYVAELLQDQRKPVVCTCSTVEVQAVLSALLTRIQRYCNCNSSMPRPVKVAAVG
GQSYLSSILRFFVKSLANKTSDWLGYMRFLIIPLGSHPVAKYLGSVDSKYSSSFLDSGWRDLFSRSEPPV
SEQLDVAGRVMQYVNGAATTHQLPVAEAMLTCRHKFPDEDSYQKFIPFIGVVKVGLVEDSPSTAGDGDDS
PVVSLTVPSTSPPSSSGLSRDATATPPSSPSMSSALAIVGSPNSPYGDVIGLQVDYWLGHPGERRREGDK
RDASSKNTLKSVFRSVQVSRLPHSGEAQLSGTMAMTVVTKEKNKKVPTIFLSKKPREKEVDSKSQVIEGI
SRLICSAKQQQTMLRVSIDGVEWSDIKFFQLAAQWPTHVKHFPVGLFSGSKAT

Unigene Name: PPP1CA Unigene ID: Hs.183994

Human PPP1CA mRNA sequence - var1 (public gi: 287796) (SEQ ID NO: 101)
GCAAGGAGCTGCTGGCTGGACGGCGGCATGTCCGACAGCGAGAAGCTCAACCTGGACTCGATCATCGGGC
GCCTGCTGGAAGTGCAGGGCTCGCGGCCTGGCAAGAATGTACAGCTGACAGAGAACGAGATCCGCGGTCT
GTGCCTGAAATCCCGGGAGATTTTTCTGAGCCAGCCCATTCTTCTGGAGCTGGAGGCACCCCTCAAGATC
TGCGGTGACATACACGGCCAGTACTACGACCTTCTGCGACTATTTGAGTATGGCGGTTTCCCTCCCGAGA

Figure 36 part - 57

GCAACTACCTCTTTCTGGGGGACTATGTGGACAGGGGCAAGCAGTCCTTGGAGACCATCTGCCTGCTGCT
GGCCTATAAGATCAAGTACCCCGAGAACTTCTTCCTGCTCCGTGGGAACCACGAGTGTGCCAGCATCAAC
CGCATCTATGGTTTCTACGATGAGTGCAAGAGACGCTACAACATCAAACTGTGGAAAACCTTCACTGACT
GCTTCAACTGCCTGCCCATCGCGGCCATAGTGGACGAAAAGATCTTCTGCTGCCACGGAGGCCTGTCCCC
GGACCTGCAGTCTATGGAGCAGATTCGGCGGATCATGCGGCCCACAGATGTGCCTGACCAGGGCCTGCTG
TGTGACCTGCTGTGGTCTGACCCTGACAAGGACGTGCAGGGCTGGGGCGAGAACGACCGTGGCGTCTCTT
TTACCTTTGGAGCCGAGGTGGTGGCCAAGTTCCTCCACAAGCACGACTTGGACCTCATCTGCCGAGCACA
CCAGGTGGTAGAAGACGGCTACGAGTTCTTTGCCAAGCGGCAGCTGGTGACACTTTTCTCAGCTCCCAAC
TACTGTGGCGAGTTTGACAATGCTGGCGCCATGATGAGTGTGGACGAGACCCTCATGTGCTCTTTCCAGA
TCCTCAAGCCCGCCGACAAGAACAAGGGGAAGTACGGGCAGTTCAGTGGCCTGAACCCTGGAGGCCGACC
CATCACCCCACCCCGCAATTCCGCCAAAGCCAAGAAATAGCCCCCGCACACCACCCTGTGCCCCAGATGA
TGGATTGATTGTACAGAAATCATGCTGCCATGCTGGGGGGGGGTCACCCCGACCCCTAAGGCCCACCTGT
CACGGGGAACATGGAGCCTTGGTGTATTTTTCTTTTCTTTTTTTAATGAATCAATAGCAGCGTCCAGTCC
CCCAGGGCTGCTTCCTGCCTGCACCTGCGGTACTGTGAGCAGGATCCTGGGGCCGAGGCTGCAGCTCAGG
GCAACGGCAGGCCAGGTCGTGGGTCTCCAGCCGTGCTTGGCCTCAGGCTGGCAGCCCGGATCCTGGGGCA
ACCCATCTGGTCTCTTGAATAAAGGTCAAAGCTGGATCGGAATC

Human PPP1CA mRNA sequence - var2 (public gi: 21758300) (SEQ ID NO: 102)
AAAAAAAAAAAAAGTTTTCCCTCCATGAGGCAGCGCGCCGACCGCCGAAGCATGGTCTCCACCAGCGGCG
CCGCCACCTCCAGCGTCCTCGGCAGGGAGTTGTGGTGCCGTAGAGGGCGGTCCCCGCGGCCCACGCCGCA
CACCACCTGGGCAGGGGGAGACTCAGGGGGAGGCCCACACACTCCCTGCCCCCCACGCACACCCCTACCG
CCTTGTGCCAAAATTCAGACCAGACCCCTCACTGGACATTCAAGAAGCCCCGTCCTCCAACGTGTCTTAA
ATTGCACACGAGCTCTCCCTGCCACTCCCCATCTGGTCCCCAGACCTCTCCAGGGATTCTACCTACCCAG
GCTTCCAGGCCCAGCTGGGGTCCCCCTCCAGGATGGCTCCTGCAGCCCTGGGGGCCTGGGCCACCCTGGT
GTGCCCCACCCTAGCATCTCCCTGGGGCGCACCTTTCCCTACCCCACTGGAGCTCCCTGAGGGCAGGGTC
GAATCTCTCCCTCTCAGTGTAGCCTAGAGCGGGGTACTCAGGAGGGTCCGTAAGCCTTCCTGACTCTCCA
GCTTAGAGGCCCCTCCTGAAGGCGTCCAGGCACTAGAGGTTTATCAGGAGGCCCTGGGTCAGCCTCTACG
TGGGCAAGAGCTCTCTGGGAAGACGGGGAGGTCTAAGGCCAGCACAGAGTGGCCAGAGGGCCACACCAAA
CTCCCATCCCTGGTCAGCCCAGGTGGCTCTCACCTGAGCAGGGCAGCTGGGCAGGTGGGTACACAGCCTC
CACCAGGACACTCTCCTCCTCCTCCAGCTTCTCCAGCAGCGCCAGCACTGTGTCCACCACTGCACCCAGC
TCTGCCCGCGGGTGCAGACGCCATGCCTGCCGCCCCCGCCAGCGCCAGCCACTGAGCTTCACAGCTACCT
GCAGCAAGGAGGGGAAAGGGGCCTCCTGGACACCACCCCAGGTACTGCAGGGTGGGGCACTTCCGCCACA
GGAGCCGTGCAGGGCTCGCGGCCTGGCAAGAATGTACAGCTGACAGAGAACGAGATCCGCGGTCTGTGCC
TGAAATCCCGGGAGATTTTTCTGAGCCAGCCCATTCTTCTGGAGCTGGAGGCACCCCTCAAGATCTGCGG
TGACATACACGGCCAGTACTACGACCTTCTGCGACTATTTGAGTATGGCGGTTTCCCTCCCGAGAGCAAC
TACCTCTTTCTGGGGGACTATGTGGACAGGGGCAAGCAGTCCTTGGAGACCATCTGCCTGCTGCTGGCCT
ATAAGATCAAGTACCCCGAGAACTTCTTCCTGCTCCGTGGGAACCACGAGTGTGCCAGCATCAACCGCAT
CTATGGTTTCTACGATGAGTGCAAGAGACGCTACAACATCAAACTGTGGAAAACCTTCACTGACTGCTTC
AACTGCCTGCCCATCGCGGCCATAGTGGACGAAAAGATCTTCTGCTGCCACGGAGGCCTGTCCCCGGACC
TGCAGTCTATGGAGCAGATTCGGCGGATCATGCGGCCCACAGATGTGCCTGACCAGGGCCTGCTGTGTGA
CCTGCTGTGGTCTGACCCTGACAAGGACGTGCAGGGCTGGGGCGAGAACGACCGTGGCGTCTCTTTTACC
TTTGGAGCCGAGGTGGTGGCCAAGTTCCTCCACAAGCACGACTTGGACCTCATCTGCCGAGCACACCAGG
TGGTAGAAGACGGCTACGAGTTCTTTGCCAAGCGGCAGCTGGTGACACTTTTCTCAGCTCCCAACTACTG
TGGCGAGTTTGACAATGCTGGCGCCATGATGAGTGTGGACGAGACCCTCATGTGCTCTTTCCAGATCCTC
AAGCCCGCCGACAAGAACAAGGGGAAGTACGGGCAGTTCAGTGGCCTGAACCCTGGAGGCCGACCCATCA
CCCCACCCCGCAATTCCGCCAAAGCCAAGAAATAGCCCCCGCACACCACCCTGTGCCCCAGATGATGGAT
TGATTGTACAGAAATCATGCTGCCATGCTGGGGGGGGGTCACCCCGACCCCTCAGGCCCACCTGTCACGG
GGAACATGGAGCCTTGGTGTATTTTTCTTTTCTTTTTTTAATGAATCAATAGCAGCGTCCAGTCCCCCAG
GGCTGCTTCCTGCCTGCACCTGCGGTGACTGTGAGCAGGATCCTGGGGCCGAGGCTGCAGCTCAGGGCAA
CGGCAGGCCAGGTCGTGGGTCTCCAGCCGTGCTTGGCCTCAGGGCTGGCAGCCGGATCCTGGGGCAACCC
ATCTGGTCTCTTGAATAAAGGTCAAAGCTGGATTCTCGC

Human PPP1CA mRNA sequence - var3 (public gi: 14124967) (SEQ ID NO: 103)
GGCTGCCGGAGGGCGGGAGGCAGGAGCGGGCCAGGAGCTGCTGGGCTGGAGCGGCGGCGCCGCCATGTCC
GACAGCGAGAAGCTCAACCTGGACTCGATCATCGGGCGCCTGCTGGAAGTGCAGGGCTCGCGGCCTGGCA
AGAATGTACAGCTGACAGAGAACGAGATCCGCGGTCTGTGCCTGAAATCCCGGGAGATTTTTCTGAGCCA
GCCCATTCTTCTGGAGCTGGAGGCACCCCTCAAGATCTGCGGTGACATACACGGCCAGTACTACGACCTT
CTGCGACTATTTGAGTATGGCGGTTTCCCTCCCGAGAGCAACTACCTCTTTCTGGGGGACTATGTGGACA
GGGGCAAGCAGTCCTTGGAGACCATCTGCCTGCTGCTGGCCTATAAGATCAAGTACCCCGAGAACTTCTT
CCTGCTCCGTGGGAACCACGAGTGTGCCAGCATCAACCGCATCTATGGTTTCTACGATGAGTGCAAGAGA
CGCTACAACATCAAACTGTGGAAAACCTTCACTGACTGCTTCAACTGCCTGCCCATCGCGGCCATAGTGG
ACGAAAAGATCTTCTGCTGCCACGGAGGCCTGTCCCCGGACCTGCAGTCTATGGAGCAGATTCGGCGGAT

Figure 36 part - 58

CATGCGGCCCACAGATGTGCCTGACCAGGGCCTGCTGTGTGACCTGCTGTGGTCTGACCCTGACAAGGAC
GTGCAGGGCTGGGGCGAGAACGACCGTGGCGTCTCTTTTACCTTTGGAGCCGAGGTGGTGGCCAAGTTCC
TCCACAAGCACGACTTGGACCTCATCTGCCGAGCACACCAGGTGGTAGAAGACGGCTACGAGTTCTTTGC
CAAGCGGCAGCTGGTGACACTTTTCTCAGCTCCCAACTACTGTGGCGAGTTTGACAATGCTGGCGCCATG
ATGAGTGTGGACGAGACCCTCATGTGCTCTTTCCAGATCCTCAAGCCCGCCGACAAGAACAAGGGGAAGT
ACGGGCAGTTCAGTGGCCTGAACCCTGGAGGCCGACCCATCACCCCACCCCGCAATTCCGCCAAAGCCAA
GAAATAGCCCCCGCACACCACCCTGTGCCCCAGATGATGGATTGATTGTACAGAAATCATGCTGCCATGC
TGGGGGGGGGTCACCCCGACCCCTCAGGCCCACCTGTCACGGGGAACATGGAGCCTTGGTGTATTTTTCT
TTTCTTTTTTTAATGAATCAATAGCAGCGTCCAGTCCCCCAGGGCTGCTTCCTGCCTGCACCTGCGGTGA
CTGTGAGCAGGATCCTGGGGCCGAGGCTGCAGCTCAGGGCAACGGCAGGCCAGGTCGTGGGTCTCCAGCC
GTGCTTGGCCTCAGGGCTGGCAGCCGGATCCTGGGGCAACCCATCTGGTCTCTTGAATAAAGGTCAAAGC
TGGATTCTCAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

Human PPP1CA mRNA sequence - var4 (public gi: 33872852) (SEQ ID NO: 104)
CCTCGTGCCGAATTCGGCACGAGGAGCGGGCCAGGAGCTGCTGGGCTGGAGCGGCGGCGCCGCCATGTCC
GACAGCGAGAAGCTCAACCTGGACTCGATCATCGGGCGCCTGCTGGAAGTGCAGGGCTCGCGGCCTGGCA
AGAATGTACAGCTGACAGAGAACGAGATCCGCGGTCTGTGCCTGAAATCCCGGGAGATTTTTCTGAGCCA
GCCCATTCTTCTGGAGCTGGAGGCACCCCTCAAGATCTGCGGTGACATACACGGCCAGTACTACGACCTT
CTGCGACTATTTGAGTATGGCGGTTTCCCTCCCGAGAGCAACTACCTCTTTCTGGGGGACTATGTGGACA
GGGGCAAGCAGTCCTTGGAGACCATCTGCCTGCTGCTGGCCTATAAGATCAAGTACCCCGAGAACTTCTT
CCTGCTCCGTGGGAACCACGAGTGTGCCAGCATCAACCGCATCTATGGTTTCTACGATGAGTGCAAGAGA
CGCTACAACATCAAACTGTGGAAAACCTTCACTGACTGCTTCAACTGCCTGCCCATCGCGGCCATAGTGG
ACGAAAAGATCTTCTGCTGCCACGGAGGCCTGTCCCCGGACCTGCAGTCTATGGAGCAGATTCGGCGGAT
CATGCGGCCCACAGATGTGCCTGACCAGGGCCTGCTGTGTGACCTGCTGTGGTCTGACCCTGACAAGGAC
GTGCAGGGCTGGGGCGAGAACGACCGTGGCGTCTCTTTTACCTTTGGAGCCGAGGTGGTGGCCAAGTTCC
TCCACAAGCACGACTTGGACCTCATCTGCCGAGCACACCAGGTGGTAGAAGACGGCTACGAGTTCTTTGC
CAAGCGGCAGCTGGTGACACTTTTCTCAGCTCCCAACTACTGTGGCGAGTTTGACAATGCTGGCGCCATG
ATGAGTGTGGACGAGACCCTCATGTGCTCTTTCCAGATCCTCAAGCCCGCCGACAAGAACAAGGGGAAGT
ACGGGCAGTTCAGTGGCCTGAACCCTGGAGGCCGACCCATCACCCCACCCCGCAATTCCGCCAAAGCCAA
GAAATAGCCCCCGCACACCACCCTGTGCCCCAGATGATGGATTGATTGTACAGAAATCATGCTGCCATGC
TGGGGGGGGGGTCACCCCGACCCCTCAGGCCCACCTGTCACGGGGAACATGGAGCCTTGGTGTATTTTTC
TTTTCTTTTTTTAATGAATCAATAGCAGCGTCCAGTCCCCCAGGGCTGCTTCCTGCCTGCACCTGCGGTG
ACTGTGAGCAGGATCCTGGGGCCGAGGCTGCAGCTCAGGGCAACGGCAGGCCAGGTCGTGGGTCTCCAGC
CGTGCTTGGCCTCAGGGCTGGCAGCCGGATCCTGGGGCAACCCATCTGGTCTCTTGAATAAAGGTCAAAG
CTGGATTCTCGAAAAAAAAAAAAAAAAA

Human PPP1CA mRNA sequence - var5 (public gi: 12804878) (SEQ ID NO: 105)
CAGGAGCGGGCCAGGAGCTGCTGGGCTGGAGCGGCGGCGCCGCCATGTCCGACAGCGAGAAGCTCAACCT
GGACTCGATCATCGGGCGCCTGCTGGAAGTGCAGGGCTCGCGGCCTGGCAAGAATGTACAGCTGACAGAG
AACGAGATCCGCGGTCTGTGCCTGAAATCCCGGGAGATTTTTCTGAGCCAGCCCATTCTTCTGGAGCTGG
AGGCACCCCTCAAGATCTGCGGTGACATACACGGCCAGTACTACGACCTTCTGCGACTATTTGAGTATGG
CGGTTTCCCTCCCGAGAGCAACTACCTCTTTCTGGGGGACTATGTGGACAGGGGCAAGCAGTCCTTGGAG
ACCATCTGCCTGCTGCTGGCCTATAAGATCAAGTACCCCGAGAACTTCTTCCTGCTCCGTGGGAACCACG
AGTGTGCCAGCATCAACCGCATCTATGGTTTCTACGATGAGTGCAAGAGACGCTACAACATCAAACTGTG
GAAAACCTTCACTGACTGCTTCAACTGCCTGCCCATCGCGGCCATAGTGGACGAAAAGATCTTCTGCTGC
CACGGAGGCCTGTCCCCGGACCTGCAGTCTATGGAGCAGATTCGGCGGATCATGCGGCCCACAGATGTGC
CTGACCAGGGCCTGCTGTGTGACCTGCTGTGGTCTGACCCTGACAAGGACGTGCAGGGCTGGGGCGAGAA
CGACCGTGGCGTCTCTTTTACCTTTGGAGCCGAGGTGGTGGCCAAGTTCCTCCACAAGCACGACTTGGAC
CTCATCTGCCGAGCACACCAGGTGGTAGAAGACGGCTACGAGTTCTTTGCCAAGCGGCAGCTGGTGACAC
TTTTCTCAGCTCCCAACTACTGTGGCGAGTTTGACAATGCTGGCGCCATGATGAGTGTGGACGAGACCCT
CATGTGCTCTTTCCAGATCCTCAAGCCCGCCGACAAGAACAAGGGGAAGTACGGGCAGTTCAGTGGCCTG
AACCCTGGAGGCCGACCCATCACCCCACCCCGCAATTCCGCCAAAGCCAAGAAATAGCCCCCGCACACCA
CCCTGTGCCCCAGATGATGGATTGATTGTACAGAAATCATGCTGCCATGCTGGGGGGGGGTCACCCCGAC
CCCTCAGGCCCACCTGTCACGGGGAACATGGAGCCTTGGTGTATTTTTCTTTTCTTTTTTTAATGAATCA
ATAGCAGCGTCCAGTCCCCCAGGGCTGCTTCCTGCCTGCACCTGCGGTGACTGTGAGCAGGATCCTGGGG
CCGAGGCTGCAGCTCAGGGCAACGGCAGGCCAGGTCGTGGGTCTCCAGCCGTGCTTGGCCTCAGGGCTGG
CAGCCGGATCCTGGGGCAACCCATCTGGTCTCTTGAATAAAGGTCAAAGCTGGATTCTCAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAA

Human PPP1CA mRNA sequence - var6 (public gi: 34534606) (SEQ ID NO: 106)
CTTCTTGCTGACGCCGCCAGCGCCGACCACCAGCAGCTGTTTTCCCTCCATGAGGCAGCGCGCCGACCGC
CGAAGCATGGTCTCCACCAGCGGCGCCGCCACCGCCTCGTCGGCCGCCGGCCCCAGCCGCGGCGCGGCCC

Figure 36 part - 59

ACAGCCCCTCCAGCGCGCCGCACGCCTCCAGACACAGGCCGCCGTTCAGCTCCAGGGCCACTGGGCTTCT
CCAGCAGCGCCAGCACTGTGTCCACCACTGCACCCAGCTCTGCCCGCGGGTGCAGACGCCATGCCTGCCG
CCCCCGCCAGCGCCAGCCACTGAGCTTCACAGCTACCTGCAGCAAGGAGGGGAAAGGGGCCTCCTGGACA
CCACCCCAGGTACTGCAGGGTGGGGCACTTCCGCCACAGGAGCCGTGCAGGGCTCGCGGCCTGGCAAGAA
TGTACAGCTGACAGAGAACGAGATCCGCGGTCTGTGCCTGAAATCCCGGGAGATTTTTCTGAGCCAGCCC
ATTCTTCTGGAGCTGGAGGCACCCCTCAAGATCTGCGGTGACATACACGGCCAGTACTACGACCTTCTGC
GACTATTTGAGTATGGCGGTTTCCCTCCCGAGAGCAACTACCTCTTTCTGGGGGACTATGTGGACAGGGG
CAAGCAGTCCTTGGAGACCATCTGCCTGCTGCTGGCCTATAAGATCAAGTACCCCGAGAACTTCTTCCTG
CTCCGTGGGAACCACGAGTGTGCCAGCATCAACCGCATCTATGGTTTCTACGATGAGTGCAAGAGACGCT
ACAACATCAAACTGTGGAAAACCTTCACTGACTGCTTCAACTGCCTGCCCATCGCGGCCATAGTGGACGA
AAAGATCTTCTGCTGCCACGGAGGCCTGTCCCCGGACCTGCAGTCTATGGAGCAGATTCGGCGGATCATG
CGGCCCACAGATGTGCCTGACCAGGGCCTGCTGTGTGACCTGCTGTGGTCTGACCCTGACAAGGACGTGC
AGGGCTGGGGCGAGAACGACCGTGGCGTCTCTTTTACCTTTGGAGCCGAGGTGGTGGCCAAGTTCCTCCA
CAAGCACGACTTGGACCTCATCTGCCGAGCACACCAGGTGGTAGAAGACGGCTACGAGTTCTTTGCCAAG
CGGCAGCTGGTGGCACTTTTCTCAGCTCCCAACTACTGTGGCGAGTTTGACAATGCTGGCGCCATGATGA
GTGTGGACGAGACCCTCATGTGCTCTTTCCAGATCCTCAAGCCCGCCGACAAGAACAAGGGGAAGTACGG
GCAGTTCAGTGGCCTGAACCCTGGAGGCTGACCCATCACCCCACCCCGCAATTCCGCCAAAGCCAAGAAA
TAGCCCCCGCACACCACCCTGTGCCCCAGATGATGGATTGATTGTACAGAAATCATGCTGCCATGCTGGG
GGGGGGTCACCCCGACCCCTCAGGCCCACCTGTCACGGGGAACATGGAGCCTTGGTGTATTTTTCTTTTC
TTTTTTTAATGAATCAATAGCAGCGTCCAGTCCCCCAGGGCTGCTTCCTGCCTGCACCTGCGGTGACTGT
GAGCAGGATCCTGGGGCCGAGGCTGCAGCTCAGGGCAACGGCAGGCCAGGTCGTGGGTCTCCAGCCGTGC
TTGGCCTCAGGGCTGGCAGCCGGATCCTGGGGCAACCCATCTGGTCTCTTGAATAAAGGTCAAAGCTGGA
TTCTC

Human PPP1CA mRNA sequence - var7 (public gi: 30582096) (SEQ ID NO: 107)
ATGTCCGACAGCGAGAAGCTCAACCTGGACTCGATCATCGGGCGCCTGCTGGAAGTGCAGGGCTCGCGGC
CTGGCAAGAATGTACAGCTGACAGAGAACGAGATCCGCGGTCTGTGCCTGAAATCCCGGGAGATTTTTCT
GAGCCAGCCCATTCTTCTGGAGCTGGAGGCACCCCTCAAGATCTGCGGTGACATACACGGCCAGTACTAC
GACCTTCTGCGACTATTTGAGTATGGCGGTTTCCCTCCCGAGAGCAACTACCTCTTTCTGGGGGACTATG
TGGACAGGGGCAAGCAGTCCTTGGAGACCATCTGCCTGCTGCTGGCCTATAAGATCAAGTACCCCGAGAA
CTTCTTCCTGCTCCGTGGGAACCACGAGTGTGCCAGCATCAACCGCATCTATGGTTTCTACGATGAGTGC
AAGAGACGCTACAACATCAAACTGTGGAAAACCTTCACTGACTGCTTCAACTGCCTGCCCATCGCGGCCA
TAGTGGACGAAAAGATCTTCTGCTGCCACGGAGGCCTGTCCCCGGACCTGCAGTCTATGGAGCAGATTCG
GCGGATCATGCGGCCCACAGATGTGCCTGACCAGGGCCTGCTGTGTGACCTGCTGTGGTCTGACCCTGAC
AAGGACGTGCAGGGCTGGGGCGAGAACGACCGTGGCGTCTCTTTTACCTTTGGAGCCGAGGTGGTGGCCA
AGTTCCTCCACAAGCACGACTTGGACCTCATCTGCCGAGCACACCAGGTGGTAGAAGACGGCTACGAGTT
CTTTGCCAAGCGGCAGCTGGTGACACTTTTCTCAGCTCCCAACTACTGTGGCGAGTTTGACAATGCTGGC
GCCATGATGAGTGTGGACGAGACCCTCATGTGCTCTTTCCAGATCCTCAAGCCCGCCGACAAGAACAAGG
GGAAGTACGGGCAGTTCAGTGGCCTGAACCCTGGAGGCCGACCCATCACCCCACCCCGCAATTCCGCCAA
AGCCAAGAAATAG

Human PPP1CA mRNA sequence - var8 (public gi: 190515) (SEQ ID NO: 108)
GGGCAAGGAGCTGCTGGCTGGACGGCGGCATGTCCGACAGCGAGAAGCTCAACCTGGACTCGATCATCGG
GCGCCTGCTGGAAGTGCAGGGCTCGCGGCCTGGCAAGAATGTACAGCTGACAGAGAACGAGATCCGCGGT
CTGTGCCTGAAATCCCGGGAGATTTTTCTGAGCCAGCCCATTCTTCTGGAGCTGGAGGCACCCCTCAAGA
TCTGCGGTGACATACACGGCCAGTACTACGACCTTCTGCGACTATTTGAGTATGGCGGTTTCCCTCCCGA
GAGCAACTACCTCTTTCTGGGGGACTATGTGGACAGGGGCAAGCAGTCCTTGGAGACCATCTGCCTGCTG
CTGGCCTATAAGATCAAGTACCCCGAGAACTTCTTCCTGCTCCGTGGGAACCACGAGTGTGCCAGCATCA
ACCGCATCTATGGTTTCTACGATGAGTGCAAGAGACGCTACAACATCAAACTGTGGAAAACCTTCACTGA
CTGCTTCAACTGCCTGCCCATCGCGGCCATAGTGGACGAAAAGATCTTCTGCTGCCACGGAGGCCTGTCC
CCGGACCTGCAGTCTATGGAGCAGATTCGGCGGATCATGCGGCCCACAGATGTGCCTGACCAGGGCCTGC
TGTGTGACCTGCTGTGGTCTGACCCTGACAAGGACGTGCAGGGCTGGGGCGAGAACGACCGTGGCGTCTC
TTTTACCTTTGGAGCCGAGGTGGTGGCCAAGTTCCTCCACAAGCACGACTTGGACCTCATCTGCCGAGCA
CACCAGGTGGTAGAAGACGGCTATGAGTTCTTTGCCAAGCGGCAGCTGGTGACACTTTTCTCAGCTCCCA
ACTACTGTGGCGAGTTTGACAATGCTGGCGCCATGATGAGTGTGGACGAGACCCTCATGTGCTCTTTCCA
GATCCTCAAGCCCGCCGACAAGAACAAGGGGAAGTACGGGCAGTTCAGTGGCCTGAACCCTGGAGGCCGA
CCCATCACCCCACCCCGCAATTCCGCCAAAGCCAAGAAATAGCCCCCGCACACCACCCTGTGCCCCAGAT
GATGGATTGATTGTACAGAAATCATGCTGCCATGCTGGGGGGGGGTCACCCCGACCCCTAAGGCCCACCT
GTCACGGGGAACATGGAGCCTTGGTGTATTTTTCTTTTCTTTTTTTAATGAATCAATAGCAGCGTCCAGT
CCCCCAGGGCTGCTTCCTGCCTGCACCTGCGGTACTGTGAGCAGGATCCTGGGGCCGAGGCTGCAGCTCA
GGGCAACGGCAGGCCAGGTCGTGGGTCTCCAGCCGTGCTTGGCCTCAGGCTGGCAGCCCGGATCCTGGGG
CAACCCATCTGGTCTCTTGAATAAAGGTCAAAGCTGG

Figure 36 part - 60

Human PPP1CA mRNA sequence - var9 (public gi: 190280) (SEQ ID NO: 109)
CGGCCTGGCAAGAATGTACAGCTGACAGAGAACGAGATCCGCGGTCTGTGCCTGAAATCCCGGGAGATTT
TTCTGAGCCAGCCCATTCTTCTGGAGCTGGAGGCACCCCTCAAGATCTGCGGTGACATACACGGCCAGTA
CTACGACCTTCTGCGACTATTTGAGTATGGAGGTTTCCCTCCCGAGAGCAACTACCTCTTTCTGGGGGAC
TATGTGGACAGGGGCAAGCAGTCCTTGGAGACCATCTGCCTGCTGCTGGCCTATAAGATCAAGTACCCCG
AGAACTTCTTCCTGCTCCGTGGGAACCACGAGTGTGCCAGCATCAACCGCATCTATGGTTTCTACGATGA
GTGCAAGAGACGCTACAACATCAAACTGTGGAAAACCTTCACTGACTGCTTCAACTGCCTGCCCATCGCG
GCCATAGTGGACGAAAAGATCTTCTGCTGCCACGGAGGCCTGTCCCCGGACCTGCAGTCTATGGAGCAGA
TTCGGCGGATCATGCGGCCCACAGATGTGCCTGACCAGGGCCTGCTGTGTGACCTGCTGTGGTCTGACCC
TGACAAGGACGTGCAGGGCTGGGGCGAGAACGACCGTGGCGTCTCTTTTACCTTTGGAGCCGAGGTGGTG
GCCAAGTTCCTCCACAAGCACGACTTGGACCTCATCTGCCGAGCACACCAGGTGGTAGAAGACGGCTACG
AGTTCTTTGCCAAGCGGCAGCTGGTGACACTTTTCTCAGCTCCCAACTACTGTGGCGAGTTTGACAATGC
TGGCGCCATGATGAGTGTGGACGAGACCCTCATGTGCTCTTTCCAGATCCTCAAGCCCGCCGACAAGAAC
AAGGGGAAGTACGGGCAGTTCAGTGGCCTGAACCCTGGAGGCCGACCCATCACCCCACCCCGCAATTCCG
CCAAAGCCAAGAAATAGCCCCCGCACACCACCCTGTGCCCCAGATGATGGATTGATTGTACAGAAATCAT
GCTGCCATGCTGGGGGGGGGTCACCCCGACCCCTCAGGCCCACCTGTCACGGGGAACATGGACCTTGGTG
TATTTTTCTTTTCTTTTTTTAATGAATCAG

Human PPP1CA protein sequence - var1 (public gi: 298964) (SEQ ID NO: 261)
MSDSEKLNLDSIIGRLLEGSRVLTPHCAPVQGSRPGKNVQLTENEIRGLCLKSREIFLSQPILLELEAPL
KICGDIHGQYYDLLRLFEYGGFPPESNYLFLGDYVDRGKQSLETICLLLAYKIKYPENFFLLRGNHECAS
INRIYGFYDECKRRYNIKLWKTFTDCFNCLPIAAIVDEKIFCCHGGLSPDLQSMEQIRRIMRPTDVPDQG
LLCDLLWSDPDKDVQGWGENDRGVSFTFGAEVVAKFLHKHDLDLICRAHQVVEDGYEFFAKRQLVTLFSA
PNYCGEFDNAGAMMSVDETLMCSFQILKPADKNKGKYGQFSGLNPGGRPITPPRNSAKAKK

Human PPP1CA protein sequence - var2 (public gi: 190516) (SEQ ID NO: 262)
MSDSEKLNLDSIIGRLLEVQGSRPGKNVQLTENEIRGLCLKSREIFLSQPILLELEAPLKICGDIHGQYY
DLLRLFEYGGFPPESNYLFLGDYVDRGKQSLETICLLLAYKIKYPENFFLLRGNHECASINRIYGFYDEC
KRRYNIKLWKTFTDCFNCLPIAAIVDEKIFCCHGGLSPDLQSMEQIRRIMRPTDVPDQGLLCDLLWSDPD
KDVQGWGENDRGVSFTFGAEVVAKFLHKHDLDLICRAHQVVEDGYEFFAKRQLVTLFSAPNYCGEFDNAG
AMMSVDETLMCSFQILKPADKNKGKYGQFSGLNPGGRPITPPRNSAKAKK

Human PPP1CA protein sequence - var3 (public gi: 190281) (SEQ ID NO: 263)
RPGKNVQLTENEIRGLCLKSREIFLSQPILLELEAPLKICGDIHGQYYDLLRLFEYGGFPPESNYLFLGD
YVDRGKQSLETICLLLAYKIKYPENFFLLRGNHECASINRIYGFYDECKRRYNIKLWKTFTDCFNCLPIA
AIVDEKIFCCHGGLSPDLQSMEQIRRIMRPTDVPDQGLLCDLLWSDPDKDVQGWGENDRGVSFTFGAEVV
AKFLHKHDLDLICRAHQVVEDGYEFFAKRQLVTLFSAPNYCGEFDNAGAMMSVDETLMCSFQILKPADKN
KGKYGQFSGLNPGGRPITPPRNSAKAKK

Human PPP1CA protein sequence - (public gi: 35451) (SEQ ID NO: 395)
MSDSEKLNLDSIIGRLLEVQGSRPGKNVQLTENEIRGLCLKSREIFLSQPILLELEAPLKICGDIHGQYY
DLLRLFEYGGFPPESNYLFLGDYVDRGKQSLETICLLLAYKIKYPENFFLLRGNHECASINRIYGFYDEC
KRRYNIKLWKTFTDCFNCLPIAAIVDEKIFCCHGGLSPDLQSMEQIRRIMRPTDVPDQGLLCDLLWSDPD
KDVQGWGENDRGVSFTFGAEVVAKFLHKHDLDLICRAHQVVEDGYEFFAKRQLVTLFSAPNYCGEFDNAG
AMMSVDETLMCSFQILKPADKNKGKYGQFSGLNPGGRPITPPRNSAKAKK

Human PPP1CA pray sequence - var1 (SEQ ID NO: 110)
CCGCCTGGTNCTACCCATGACNCACNTACCANTATTACGTCTACATATGGCTCATGGCAGGCCAGTTGAA
ATTCCACACACAATACAAGTGCGCTCATCGACACGCAGAAGAAGGNCATTTTGNTTGNGNAACTTNATTA
TAGGGCNAGNGCCCCCNTGGANTTCCNNTACAACNTNCCAGGATNACGCTCATATGGCCATGGAGGCCAG
TGAATTCCACCCAAGCGGTGGTATCAACGCACAGTGGCCATTATGGCGGGCAGTGGCCANAACCCTGGAG
GCCGACCCATCACCCCACCCCGCAATTCCGCCAAAGCCAAGAAATAGNNGGCGCACACCACCCTGTGCCT
TNNATGATGGATTGATTGTACAGAAATCATGCTGCCATGCTGGGGGGGGG

Unigene Name: PRKAR1A Unigene ID: Hs.280342

Human PRKAR1A mRNA sequence - var1 (public gi: 34530409) (SEQ ID NO: 111)
ATCGCAGAGTGGAGCGGGGCTGGGAGCAAAGCGCTGAGGGAGCTCGGTACGCCGCCGCCTCGCACCCGCA

Figure 36 part - 61

GCCTCGCGCCCGCCGCCGCCCGTCCCCAGAGAACCATGGAGTCTGGCAGTACCGCCGCCAGTGAGGAGGC
ACGCAGCCTTCGAGAATGTGAGCTCTACGTCCAGAAGCATAACATTCAAGCGCTGCTCAAAGATTCTATT
GTGCAGTTGTGCACTGCTCGACCTGAGAGACCCATGGCATTCCTCAGGGAATACTTTGAGAGGAGGAGGC
AAAACAGATTCAGAATCTGCAGAAAGCAGGCACTCGTACAGACTCAAGGGAGGATGAGATTTCTCCTCCT
CCACCCAACCCAGTGGTTAAAGGTAGGAGGCGACGAGGTGCTATCAGCGCTGAGGTCTACACGGAGGAAG
ATGCGGCATCCTATGTTAGAAAGGTTATACCAAAAGATTACAAGACAATGGCCGCTTTAGCCAAAGCCAT
TGAAAAGAATGTGCTGTTTTCACATCTTGATGATAATGAGAGAAGTGATATTTTTGATGCCATGTTTTCG
GTCTCCTTTATCGCAGGAGAGACTGTGATTCAGCAAGGTGATGAAGGGGATAACTTCTATGTGATTGATC
AAGGAGAGACGGATGTCTATGTTAACAATGAATGGGCAACCAGTGTTGGGGAAGGAGGGAGCTTTGGAGA
ACTTGCTTTGATTTATGGAACACCGAGAGCAGCCACTGTCAAAGCAAAGACAAATGTGAAATTGTGGGGC
ATCGACCGAGACAGCTATAGAAGAATCCTCATGGGAAGCACACTGAGAAAGCGGAAGATGTATGAGGAAT
TCCTTAGTAAAGTCTCTATTTTAGAGTCTCTGGACAAGTGGGAACGTCTTACGGTAGCTGATGCATTGGA
ACCAGTGCAGTTTGAAGATGGGCAGAAGATTGTGGTGCAGGGAGAACCAGGGGATGAGTTCTTCATTATT
TTAGAGGGGTCAGCTGCTGTGCTACAACGTCGGTCAGAAAATGAAGAGTTTGTTGAAGTGGGAAGATTGG
GGCCTTCTGATTATTTTGGTGAAATTGCACTACTGATGAATCGTCCTCGTGCTGCCACAGTTGTTGCTCG
TGGCCCCTTGAAGTGCGTTAAGCTGGACCGACCTAGATTTGAACGTGTTCTTGGCCCATGCTCAGACATC
CTCAAACGAAACATCCAGCAGTACAACAGTTTTGTGTCACTGTCTGTCTGAAATCTGCCTCCTGTGCCTC
CCTTTTCTCCTCTCCCCAATCCATGCTTCACTCATGCAAACTGCTTTATTTTCCCTACTTGCAGCGCCAA
GTGGCCACTGGCATCGCAGCTTCCTGTCTGTTTATATATTGAAAGTTGCTTTTATTGCACCATTTTCAAT
TTGGAGCATTAACTAAATGCTCATACACAGTTAAATAAATAGAAAGAGTTCTATGGAGACTTTGCTGTTA
CTGCTTCTCTTTGTGCAGTGTTAGTATTCACCCTGGGCAGTGAGTGCCATGCTTTTTGGTGAGGGCAGAT
CCCAGCACCTATTGAATTACCATAGAGTAATGATGTAACAGTGCAAGATTTTTTTTTTTAAGTGACATAA
TTGTCCAGTTATAAGCGTATTTAGACTGTGGCCATATATGCTGTATTTCTTTGTAGAATAAATGGTTTCT
CATTAAACTCTAAAGATTAGGGAAAATGGATATAGAAAATCTTAGTATAGTAGAAAGACATCTGCCTGTA
ATTAAACTAGTTTAAGGGTGGAAAAATGCCCATTTTTGCTAATTATCAATGGGATATGATTGGTTCAGTT
TTTTTTTTTTTCCAGAGTTGTTGTTTGCCAAGCTAATCTGCCTGGTTTTATTTATATCTTGTTATTAATG
TTTCTTCTCCAATTCTGAAATACTTTTGAGTATGGCTATCTATACCTGCCTTTTAAGTTTGAAACTAACT
CATAGATTGCAAATATTGGTTAGTATTTAACTACATCTGCCTCGGCTCACAAATTCCGATTAGACCTTTA
TCCAGCTAGTGCCAAATAATTGATCAGATGCTGAATTGAGAATAAGAATTTGAGGTCTACATTCTTGGTT
GTTAATTTAGAGCGTTTGGTTAAAGTATGTCCTTCAGCTGACTCCAGTATAATCTCCTCTGCTCATTAAA
CTGATTCCAGGAGATTGGATTTGCTGTGACTAGATACAGATGGAGCAAATGTCCTAACAGAGAAATAGAG
GTGATGCTGCTAAAGGGAGAAATGCCAGGCGGACAAAGTTCAGTGTCGGGAATTTTCCCCGTGACATTCA
CTGGGGCATGAGATTTTGGAAGAAGTTTTTTACTTTGGTTTAGTCTTTTTTTCCTTCCTTTTTATTCAGC
TAGAATTTCTGGTGGGTTGATGGTAGGGTATAATGTGTCTGTGTTGCTTCAAATTGGTCTGAAAGGCTAT
CCTGCTGAAAGTCCTGCTTTCCTATCTAGCATTTATTCCTCTGGCAAACTTTTCTTTCTTTTCTTTTTTA
AAGTAAACTTGTGTATTGAGTCTTAACTGTATTTCAGTATTTTCCAGCCTTATGTGTTACATTATTCCAA
TGATACCCAACAGTTTATTTTTATTATTTTTTTAAACAAAATTTCACAGTTCTGTAATGTAGGCACTTTT
ATTTTCATTGTGATTTATATATAAGGTAATGTAGGGTTATATTTGGGAGTGACTGCAAGCATTTTTCCAT
CTGTGTGCAACTAACTGACTCTGTTATTGATCCCTTCTCCTGCCCTTTCCCAGGTAATTTAAATTGGTCA
TGGTAGATTTTTTTCATAGATTTGAAAAACTTTTAGGTTGTTACCAAGTATGAAGTATAAATCTGGGGAA
GAGGTTTTATTTACATTTTAGGGTGGGTAAGAAAGCCACCTTGTTACAAATTTTTTAATTTCCAAAATAA
TCTATATTAAATGAGGGTTTCTGATCTGTACTTTGTGTTTAGCTACCTTTTTATATTTAAAAAATTAAAA
ATGAAAATTATGTTCTTACAAGCTTAAAGCTTGATTTGATCTTTGTTTAAATGCCAAAATGTACTTAAAT
GAGTTACTTAGAATGCCATAAAATTGCAGTTTCATGTATGTATATAATCATGCTCATGTATATTTAGTTA
CGTATAATGCTTTCTGAGTGAGTTTTACTCTTAAATCATTTGGTTAAATCATTTGGCTTGCTGTTTACTC
CCTTCTGTAGTTTTTAATTAAAAGCTTTAAAGATAAGTCTACATTAAACAATGATCACATCTAAAGCTTT
ATCTTTGTGTAATCTAAGTATATGTGAGAAATCAGAATTGGCATAATTTGTCTTAGTTGATATTCAAGGC
TTTAAAAGTCATTATTCCTGGGCTTGGTAAGTGAATTTATGAGATTTACTGCTCTAGAAAGTATAGATGG
CCAAAGGACCGTTTTGTATTGCTTCCTGATTACCAGTCTGATTATACCATGTGTGCTAATATACTTTTTT
TGTTATAGATTGTCTTAATGGTAGGTCAAGTAATAAAAAGAGATGAAATAATTT

Human PRKAR1A mRNA sequence - var2 (public gi: 4884279) (SEQ ID NO: 112)

TATTTTCCAGCCTTATGTGTTACATTATTCCAATGATACCCAACAGTTTATTTTTATTATTTTTTTAAAC
AAAATTTCACAGTTCTGTAATGTAGGCACTTTTATTTTCATTGTGATTTATATATAAGGTAATGTAGGGT
TATATTTGGGAGTGACTGCAAGCATTTTTCCATCTGTGTGCAACTAACTGACTCTGTTATTGATCCCTTC
TCCTGCCCTTTCCCAGGTAATTTAAATTGGTCATGGTAGATTTTTTTCATAGATTTGAAAAACTTTTAGG
TTGTTACCAAGTATGAAGTATAAATCTGGGGAAGAGGTTTTATTTACATTTTAGGGTGGGTAAGAAAGCC
ACCTTGTTACAAATTTTTTAATTTCCAAAATAATCTATATTAAATGAGGGTTTCTGATCTGTACTTTGTG
TTTAGCTACCTTTTTATATTTAAAAAATTAAAAATGAAAATTACGTTCTTACAAGCTTAAAGCTTGATTT
GATCTTTGTTTAAATGCCAAAATGTACTTAAATGAGTTACTTAGAATGCCATAAAATTGCAGTTTCATGT
ATGTATATAATCATGCTCATGTATATTTAGTTACGTATAATGCTTTCTGAGTGAGTTTTACTCTTAAATC
ATTTGGTTAAATCATTTGGCTTGCTGTTTACTCCCTTCTGTAGTTTTTAATTAAAAACTTTAAAGATAAG
TCTACATTAAACAATGATCACATCTAAAGCTTTATCTTTGTGTAATCTAAGTATATGTGAGAAATCAGAA

Figure 36 part - 62

TTGGCATAATTTGTCTTAGTTGATATTCAAGGCTTTAAAAGTCATTATTCCTGGGCTTGGTAAGTGAATT
TATGAGATTTACTGCTCTAGAAAGTATAGATGGCCAAAGGACCGTTATGTATTGCTTCCTGATTACCAGT
CTGATTATACCATGTGTGCTAATATACTTTTTTTGTTATAGATTGTCTTAATGGTAGGTCAAGTAATAAA
AAGAGATGAAATAATTTAAAAAAAAAAAAA

Human PRKAR1A mRNA sequence - var3 (public gi: 33636720) (SEQ ID NO: 113)
GGTGGAGCTGTCGCCTAGCCGCTATCGCAGAGTGGAGCGGGGCTGGGAGCAAAGCGCTGAGGGAGCTCGG
TACGCCGCCGCCTCGCACCCGCAGCCTCGCGCCCGCCGCCGCCCGTCCCCAGAGAACCATGGAGTCTGGC
AGTACCGCCGCCAGTGAGGAGGCACGCAGCCTTCGAGAATGTGAGCTCTACGTCCAGAAGCATAACATTC
AAGCGCTGCTCAAAGATTCTATTGTGCAGTTGTGCACTGCTCGACCTGAGAGACCCATGGCATTCCTCAG
GGAATACTTTGAGAGGTTGGAGAAGGAGGAGGCAAAACAGATTCAGAATCTGCAGAAAGCAGGCACTCGT
ACAGACTCAAGGGAGGATGAGATTTCTCCTCCTCCACCCAACCCAGTGGTTAAAGGTAGGAGGCGACGAG
GTGCTATCAGCGCTGAGGTCTACACGGAGGAAGATGCGGCATCCTATGTTAGAAAGGTTATACCAAAAGA
TTACAAGACAATGGCCGCTTTAGCCAAAGCCATTGAAAAGAATGTGCTGTTTTCACATCTTGATGATAAT
GAGAGAAGTGATATTTTTGATGCCATGTTTTCGGTCTCCTTTATCGCAGGAGAGACTGTGATTCAGCAAG
GTGATGAAGGGGATAACTTCTATGTGATTGATCAAGGAGAGACGGATGTCTATGTTAACAATGAATGGGC
AACCAGTGTTGGGGAAGGAGGGAGCTTTGGAGAACTTGCTTTGATTTATGGAACACCGAGAGCAGCCACT
GTCAAAGCAAAGACAAATGTGAAATTGTGGGGCATCGACCGAGACAGCTATAGAAGAATCCTCATGGGAA
GCACACTGAGAAAGCGGAAGATGTATGAGGAATTCCTTAGTAAAGTCTCTATTTTAGAGTCTCTGGACAA
GTGGGAACGTCTTACGGTAGCTGATGCATTGGAACCAGTGCAGTTTGAAGATGGGCAGAAGATTGTGGTG
CAGGGAGAACCAGGGGATGAGTTCTTCATTATTTTAGAGGGGTCAGCTGCTGTGCTACAACGTCGGTCAG
AAAATGAAGAGTTTGTTGAAGTGGGAAGATTGGGGCCTTCTGATTATTTTGGTGAAATTGCACTACTGAT
GAATCGTCCTCGTGCTGCCACAGTTGTTGCTCGTGGCCCCTTGAAGTGCGTTAAGCTGGACCGACCTAGA
TTTGAACGTGTTCTTGGCCCATGCTCAGACATCCTCAAACGAAACATCCAGCAGTACAACAGTTTTGTGT
CACTGTCTGTCTGAAATCTGCCTCCTGTGCCTCCCTTTTCTCCTCTCCCCAATCCATGCTTCACTCATGC
AAACTGCTTTATTTTCCCTACTTGCAGCGCCAAGTGGCCACTGGCATCGCAGCTTCCTGTCTGTTTATAT
ATTGAAAGTTGCTTTTATTGCACCATTTTCAATTTGGAGCATTAACTAAATGCTCATACACAGTTAAATA
AATAGAAAGAGTTCTATGGAGACTTTGCTGTTACTGCTTCTCTTTGTGCAGTGTTAGTATTCACCCTGGG
CAGTGAGTGCCATGCTTTTTGGTGAGGGCAGATCCCAGCACCTATTGAATTACCATAGAGTAATGATGTA
ACAGTGCAAGATTTTTTTTTTAAGTGACATAATTGTCCAGTTATAAGCGTATTTAGACTGTGGCCATATA
TGCTGTATTTCTTTGTAGAATAAATGGTTTCTCATTAAACTCTAAAGATTAGGGAAAATGGATATAGAAA
ATCTTAGTATAGTAGAAAGACATCTGCCTGTAATTAAACTAGTTTAAGGGTGGAAAAATGCCCATTTTTG
CTAATTATCAATGGGATATGATTGGTTCAGTTTTTTTTTTTCCAGAGTTGTTGTTTGCCAAGCTAATCTG
CCTGGTTTTATTTATATCTTGTTATTAATGTTTCTTCTCCAATTCTGAAATACTTTTGAGTATGGCTATC
TATACCTGCCTTTTAAGTTTGAAACTAACTCATAGATTGCAAATATTGGTTAGTATTTAACTACATCTGC
CTCGGCTCACAAATTCCGATTAGACCTTTATCCAGCTAGTGCCAAATAATTGATCAGATGCTGAATTGAG
AATAAGAATTTGAGGTCTACATTCTTGGTTGTTAATTTAGAGCGTTTGGTTAAAGTATGTCCTTCAGCTG
ACTCCAGTATAATCTCCTCTGCTCATTAAACTGATTCCAGGAGATTGGATTTGCTGTGACTAGATACAGA
TGGAGCAAATGTCCTAACAGAGAAATAGAGGTGATGCTGCTAAAGGGAGAAATGCCAGGCGGACAAAGTT
CAGTGTCGGGAATTTTCCCCGTGACATTCACTGGGGCATGAGATTTTGGAAGAAGTTTTTTACTTTGGTT
TAGTCTTTTTTTCCTTCCTTTTTATTCAGCTAGAATTTCTGGTGGGTTGATGGTAGGGTATAATGTGTCT
GTGTTGCTTCAAATTGGTCTGAAAGGCTATCCTGCGGAAAGTCCTGCTTTCCTATCTAGCATTTATTTCT
CTGGCAAACTTTTCTTTCTTTTCTTTTTTAAAGTAAACTTGTGTATTGAGTCTTAACTGTATTTCAGTAT
TTTCCAGCCTTATGTGTTACATTATTCCAATGATACCCAACAGTTTATTTTTATTATTTTTTTAAACAAA
ATTTCACAGTTCTGTAATGTAGGCACTTTTATTTTCATTGTGATTTATATATAAGGTAATGTAGGGTTAT
ATTTGGGAGTGACTGCAAGCATTTTTCCATCTGTGTGCAACTAACTGACTCTGTTATTGATCCCTTCTCC
TGCCCTTTCCCAGGTAATTTAAATTGGTCATGGTAGATTTTTTTCATAGATTTGAAAAACTTTTAGGTTG
TTACCAAGTATGAAGTATAAATCTGGGGAAGAGGTTTTATTTACATTTTAGGGTGGGTAAGAAAGCCACC
TTGTTACAAATTTTTTAATTTCCAAAATAATCTATATTAAATGAGGGTTTCTGATCTGTACTTTGTGTTT
AGCTACCTTTTTATATTTAAAAAATTAAAAATGAAAATTACGTTCTTACAAGCTTAAAGCTTGATTTGAT
CTTTGTTTAAATGCCAAAATGTACTTAAATGAGTTACTTAGAATGCCATAAAATTGCAGTTTCATGTATG
TATATAATCATGCTCATGTATATTTAGTTACGTATAATGCTTTCTGAGTGAGTTTTACTCTTAAATCATT
TGGTTAAATCATTTGGCTTGCTGTTTACTCCCTTCTGTAGTTTTTAATTAAAAACTTTAAAGATAAGTCT
ACATTAAACAATGATCACATCTAAAGCTTTATCTTTGTGTAATCTAAGTATATGTGAGAAATCAGAATTG
GCATAATTTGTCTTAGTTGATATTCAAGGCTTTAAAAGTCATTATTCCTGGGCTTGGTAAGTGAATTTAT
GAGATTTACTGCTCTAGAAAGTATAGATGGCGAAAGGACCGTTTTGTATTGCTTCCTGATTACCAGTCTG
ATTATACCATGTGTGCTAATATACTTTTTTTGTTATAGATTGTCTTAATGGTAGGTCAAGTAATAAAAAG
AGATGAAATAATTTAAAAAAAAAAAAAAA

Human PRKAR1A mRNA sequence - var4 (public gi: 1526989) (SEQ ID NO: 114)
GCTGGGAGCAAAGCGCTGAGGGAGCTCGGTACGCCGCCGCCTCGCACCCGCAGCCTCGCGCCCGCCGCCG
CCCGTCCCCAGAGAACCATGGAGTCTGGCAGTACCGCCGCCAGTGAGGAGGCACGCAGCCTTCGAGAATG

Figure 36 part - 63

TGAGCTCTACGTCCAGAAGCATAACATTCAAGCGCTGCTCAAAGATTCTATTGTGCAGTTGTGCACTGCT
CGACCTGAGAGACCCATGGCATTCCTCAGGGAATACTTTGAGAGGTTGGAGAAGGAGGAGGCAAAACAGA
TTCAGAATCTGCAGAAAGCAGGCACTCGTACAGACTCAAGGGAGGATGAGATTTCTCCTCCTCCACCCAA
CCCAGTGGTTAAAGGTAGGAGGCGACGAGGTGCTATCAGCGCTGAGGTCTACACGGAGGAAGATGCGGCA
TCCTATGTTAGAAAGGTTATACCAAAAGATTACAAGACAATGGCCGCTTTAGCCAAAGCCATTGAAAAGA
ATGTGCTGTTTTCACATCTTGATGATAATGAGAGAAGTGATATTTTTGATGCCATGTTTTCGGTCTCCTT
TATCGCAGGAGAGACTGTGATTCAGCAAGGTGATGAAGGGGATAACTTCTATGTGATTGATCAAGGAGAG
ACGGATGTCTATGTTAACAATGAATGGGCAACCAGTGTTGGGGAAGGAGGGAGCTTTGGAGAACTTGCTT
TGATTTATGGAACACCGAGAGCAGCCACTGTCAAAGCAAAGACAAATGTGAAATTGTGGGGCATCGACCG
AGACAGCTATAGAAGAATCCTCATGGGAAGCACACTGAGAAAGCGGAAGATGTATGAGGAATTCCTTAGT
AAAGTCTCTATTTTAGAGTCTCTGGACAAGTGGGAACGTCTTACGGTAGCTGATGCATTGGAACCAGTGC
AGTTTGAAGATGGGCAGAAGATTGTGGTGCAGGGAGAACCAGGGGATGAGTTCTTCATTATTTTAGAGGG
GTCAGCTGCTGTGCTACAACGTCGGTCAGAAAATGAAGAGTTTGTTGAAGTGGGAAGATTGGGGCCTTCT
GATTATTTTGGTGAAATTGCACTACTGATGAATCGTCCTCGTGCTGCCACAGTTGTTGCTCGTGGCCCCT
TGAAGTGCGTTAAGCTGGACCGACCTAGATTTGAACGTGTTCTTGGCCCATGCTCAGACATCCTCAAACG
AAACATCCAGCAGTACAACAGTTTTGTGTCACTGTCTGTCTGAAATCTGCCTCCTGTGCCTCCCTTTTCT
CCTCTCCCCAATCCATGCTTCACTCATGCAAACTGCTTTATTTTCCCTACTTGCAGCGCCAAGTGGCCAC
TGGCATCGCAGCTTCCTGTCTGTTTATATATTGAAAGTTGCTTTTATTGCACCATTTTCAATTTGGAGCA
TTAACTAAATGCTCATACACAGTTAAATAAATAGAAAGAGTTCTATGGAGACTTTGCTGTTACTGCTTCT
CTTTGTGCAGTGTTAGTATTCACCCTGGGCAGTGAGTGCCATGCTTTTTGGTGAGGGCAGATCCAGCACC
TATTGAATTACCATAGAGTAATGATGTAACAGTGCAAGATTTTTTTTTTTAAGTGACATAATTGTCCAGT
TATAAGCGTATTTAGACTGTGGCCATATATGCTGTATTTCTTTGTAGAATAAATGGTTTCTCATTAAACT
CTAAAGATTAGGGAAATGGATATAGAAAATCTTAGTATAGTAGAAAGACATCTGCCTGTAATTAAACTAG
TTTAAGGGTGGAAAAATGAAAATTTTTGCTAATTATCAATGGGATATGATTGGTTCAGTTTTTTTTTTCC
AGAGTTGTTGTTTGCCAAGCTAATCTGCCTGGTTTATTTATATCTTGTTATTAATGTTTCTTCTCCAATT
CTGAAATACTTTTGAGTATGGCTATCTATACCTGCCTTTTAAGTTTGAAACTAACTCATAGATGCAAATA
TTGGTTAGTATTTAACTACATCTGCCTCGGCTCACAAATTCCGATTAGACCTTTATCCAGCTAGTGCCAA
ATAATTGATCAGATGCTGAATTGAGAATAAGAATTTGAGGTCTACATTCTTGGTTGTTAATTTAGAGCGT
TTGGTTAAAGTATGTCCTTCAGCTGACTCCAGTATAATCTCCTCTGCTCATTAAACTGATTCCAGGAGAT
TGGATTTGCTGTGACTAGATACAGATGGAGCAAATGTCCTAACAGAGAAATAGAGGTGATGCTGCTAAAG
GGAGAAATGCCAGGCGGACAAAGTTCAGTGTCGGGAATTTTCCCCGTGACATTCACTGGGGCATGAGATT
TTGGAAGAAGTTTTTTACTTTGGTTTAGTCTTTTTTTCCTCCTTTTTATTCAGCTAGAATTTCTGGTGGG
TTGATGGTAGGGTATAATGTGTCTGTGTTGCTTCAAATTGGTCTGAAAGGCTATCCTGCTGAAAGTCCTG
CTTTCCTATCTAGCATTTATTCCTCTGGCAAACTTTTCTTTCTTTTCTTTTTTAAAGTAAACTTGTGTAT
TGAGTCTTAACTGTATTTCAGTATTTTCCAGCCTTATGTGTTACATTATTCCAATGATACCCAACAGTTT
ATTTTTATTATTTTTTTAAACAAAATTTCACAGTTCTGTAATGTAGGCACTTTTATTTTCATTGTGATTT
ATATATAAGGTAATGTAGGGTTATATTTGGGAGTGACTGCAAGCATTTTTCCATCTGTGTGCAACTAACT
GACTCTGTTATTGATCCCTTCTCCTGCCCTTTCCCAGGTAATTTAAATTGGTCATGGTAGATTTTTTTCA
TAGATTTGAAAAACTTTTAGGTTGTTACCAAGTATGAAGTATAAATCTGGGGAAGAGGTTTTATTTACAT
TTTAGGGTGGGTAAGAAAGCCACCTTGTTACAAATTTTTTAATTTCCAAAATAATCTATATTAAATGAGG
GTTTCTGATCTGTACTTTGTGTTTAGCTACCTTTTTATATTTAAAAAATTAAAAATGAAAATTATGTTCT
TACAAGCTTAAAGCTTGATTTGATCT

Human PRKAR1A mRNA sequence - var5 (public gi: 1526988) (SEQ ID NO: 115)

GGCAGAGTGGAGCGGGGCTGGGAGCAAAGCGCTGAGGGAGCTCGGTACGCCGCCGCCTCGCACCCGCAGC
CTCGCGCCCGCCGCCGCCCGTCCCCAGAGAACCATGGAGTCTGGCAGTACCGCCGCCAGTGAGGAGGCAC
GCAGCCTTCGAGAATGTGAGCTCTACGTCCAGAAGCATAACATTCAAGCGCTGCTCAAAGATTCTATTGT
GCAGTTGTGCACTGCTCGACCTGAGAGACCCATGGCATTCCTCAGGGAATACTTTGAGAGGTTGGAGAAG
GAGGAGGCAAAACAGATTCAGAATCTGCAGAAAGCAGGCACTCGTACAGACTCAAGGGAGGATGAGATTT
CTCCTCCTCCACCCAACCCAGTGGTTAAAGGTAGGAGGCGACGAGGTGCTATCAGCGCTGAGGTCTACAC
GGAGGAAGATGCGGCATCCTATGTTAGAAAGGTTATACCAAAAGATTACAAGACAATGGCCGCTTTAGCC
AAAGCCATTGAAAAGAATGTGCTGTTTTCACATCTTGATGATAATGAGAGAAGTGATATTTTTGATGCCA
TGTTTTCGGTCTCCTTTATCGCAGGAGAGACTGTGATTCAGCAAGGTGATGAAGGGGATAACTTCTATGT
GATTGATCAAGGAGAGACGGATGTCTATGTTAACAATGAATGGGCAACCAGTGTTGGGGAAGGAGGGAGC
TTTGGAGAACTTGCTTTGATTTATGGAACACCGAGAGCAGCCACTGTCAAAGCAAAGACAAATGTGAAAT
TGTGGGGCATCGACCGAGACAGCTATAGAAGAATCCTCATGGGAAGCACACTGAGAAAGCGGAAGATGTA
TGAGGAATTCCTTAGTAAAGTCTCTATTTTAGAGTCTCTGGACAAGTGGGAACGTCTTACGGTAGCTGAT
GCATTGGAACCAGTGCAGTTTGAAGATGGGCAGAAGATTGTGGTGCAGGGAGAACCAGGGGATGAGTTCT
TCATTATTTTAGAGGGGTCAGCTGCTGTGCTACAACGTCGGTCAGAAAATGAAGAGTTTGTTGAAGTGGG
AAGATTGGGGCCTTCTGATTATTTTGGTGAAATTGCACTACTGATGAATCGTCCTCGTGCTGCCACAGTT
GTTGCTCGTGGCCCCTTGAAGTGCGTTAAGCTGGACCGACCTAGATTTGAACGTGTTCTTGGCCCATGCT
CAGACATCCTCAAACGAAACATCCAGCAGTACAACAGTTTTGTGTCACTGTCTGTCTGAAATCTGCCTCC
TGTGCCTCCCTTTTCTCCTCTCCCCAATCCATGCTTCACTCATGCAAACTGCTTTATTTTCCCTACTTGC

Figure 36 part - 64

AGCGCCAAGTGGCCACTGGCATCGCAGCTTCCTGTCTGTTTATATATTAAAGTTGCTTTTATTGCACCAT
TTTCAATTTGGAGCATTAACTAAATGCTCATACACAGTTAAATAAATAGAAAGAGTTCTATGGAAAAAAA
AAAAAA

Human PRKAR1A mRNA sequence - var6 (public gi: 9956010) (SEQ ID NO: 116)
AACTGACTCTGTTATTGATCCCTTCTCCTGCCCTTTCCCAGGTAATTTAAATTGGTCATGGTAGATTTTT
TTCATAGATTTGAAAAACTTTTAGGTTGTTACCAAGTATGAAGTATAAATCTGGGGAAGAGGTTTTATTT
ACATTTTAGGGTGGGTAAGAAAGCCACCTTGTTACAAATTTTTTAATTTCCAAAATAATCTATATTAAAT
GAGGGTTTCTGATCTGTACTTTGTGTTTAGCTACCTTTTTATATTTAAAAAATTAAAAATGAAAATTACG
TTCTTACAAGCTTAAAGCTTGATTTGATCTTTGTTTAAATGCCAAAATGTACTTAAATGAGTTACTTAGA
ATGCCATAAAATTGCAGTTTCATGTATGTATATAATCATGCTCATGTATATTTAGTTACGTATAATGCTT
TCTGAGTGAGTTTTACTCTTAAATCATTTGGTTAAATCATTTGGCTTGCTGTTTACTCCCTTCTGTAGTT
TTTAATTAAAAACTTTAAAGATAAGTCTACATTAAACAATGATCACATCTAAAGCTTTATCTTTGTGTAA
TCTAAGTATATGTGAGAAATCAGAATTGGCATAATTTGTCTTAGTTGATATTCAAGGCTTTAAAAGTCAT
TATTCCTGGGCTTGGTAAGTGAATTTATGAGATTTACTGCTCTAGAAAGTATAGATGGCCAAAGGACCGT
TTTGTATTGCTTCCTGATTACCAGTCTGATTATACCATGTGTGCTAATATACTTTTTTTGTTATAGATTG
TCTTAATGGTAGGTCAAGTAATAAAAAGAGATGAAATAATTTAAATTCTTAAATGAATCAGTTTTTCTTC
CCTTTCTCCTTTCCGTCTTTCCTCTCTCTGTCCTTCCCCGAAAGTCTACTCGGGTGGGCAAAAATGAAAA
GGGGGAAAGTGAATTATGGGATCGGTGTTTTGAAAGAGCAATGTTTATTTTCAGTGCTTTTCAGTTTGTC
AAAGAGTGGATCTCAAAATCTTGCTTAAAGGGTAATTGAGATGTAGCAGATTTATTTACTTAGTCATGGA
AAGAAAAAAATTCAGTCAAAAGCTAAAGATTTCCTTTTGATTGAAGACAGATTGGTTCTGTGGCCTTGGA
ACTTTCCCAGACTTAATGGGGAAACATCATTTCTAGATTAGCATACTCTTTGGTTTAAATTTAATATATA
CATTTAATGTTACTTAGGGATACTTTTATATTTTGCATATATAAAGCCTCATATATAAAGCCTTATTTCT
GATGCTCTTAGATTTCTGAGGAGTGAGATGATTAAGTTGTATTCATTAGTGTATTGGTATTTCTTCACAT
CCAGTGAAATTGGAGATATGTTGTATGTTAGAAGAGCATTCTTTAAATTGTGTTGCTTTGAACATGTGTA
CCTTTTCTAGATTCAGTAATCCCTTCCCCCCGTCCTCTGGAGTATGAAACCTTTAGAGTCACAATAAAAT
GTAACTAAAGAAAAAAAAAAAAAAAAAAAAAAAA

Human PRKAR1A mRNA sequence - var7 (public gi: 21757396) (SEQ ID NO: 117)
TAATTTTCTTGTGTGTTTTTAAAAATTTTGATTATGCTAGTAGTTGGCTAATCAGATCCTCACTCCAGTG
GTTTGCTCTGTGACGTTAGGATACTCCCATGGGATAGAAGTTACGTATAGGGAATGTCAGATATTCTTCA
TTGTGCTGACTTGCTTTCGCTTACAGTTGACTTTTGTGCCCTGGTAATTCTGTATCCTGTTTACCGTTTA
CCTACTTCCCACGTCATCATGATTTCTTTTGAGGGAGAACTGAATGAAATTCCCTTAAGGGCCTGACTTC
AGCACCCGTCTCTGCAGAGGTTAGTGGCTCATACTTCCTCCCAGGAGCTGAGGTTATCGACTCTCACTGT
TGCCTACAGAGCACAGATCCTGAACTAAATGAAACATTTACTTGGAATAATGCTAATTCTGTACATATTT
TATTCCCTAGTCCCCACTTCCCTGTTTAAAAACAAAATCTACTTAGAAAAAAATCCCTGTGAATCAGTTG
TCTAATGAATTTAGCAAGTTAAATGCCAGATTGACATTTTGCTTTATAGTTTATACAAGCATGTGTGTGT
TTTTTTCTCGCAGAGAACCATGGAGTCTGGCAGTACCGCCGCCAGTGAGGAGGCACGCAGCCTTCGAGAA
TGTGAGCTCTACGTCCAGAAGCATAACATTCAAGCGCTGCTCAAAGATTCTATTGTGCAGTTGTGCACTG
CTCGACCTGAGAGACCCATGGCATTCCTCAGGGAATACTTTGAGAGGTTGGAGAAGGAGGAGGCAAAACA
GATTCAGAATCTGCAGAAAGCAGGCACTCGTACAGACTCAAGGGAGGATGAGATTTCTCCTCCTCCACCC
AACCCAGTGGTTAAAGGTAGGAGGCGACGAGGTGCTATCAGCGCTGAGGTCTACACGGAGGAAGATGCGG
CATCCTATGTTAGAAAGGTTATACCAAAAGATTACAAGACAATGGCCGCTTTAGCCAAAGCCATTGAAAA
GAATGTGCTGTTTTCACATCTTGATGATAATGAGAGAAGTGATATTTTTGATGCCATGTTTTCGGTCTCC
TTTATCGCAGGAGAGACTGTGATTCAGCAAGGTGATGAAGGGGATAACTTCTATGTGATTGATCAAGGAG
AGACGGATGTCTATGTTAACAATGAATGGGCAACCAGTGTTGGGGAAGGAGGGAGCTTTGGAGAACTTGC
TTTGATTTATGGAACACCGAGAGCAGCCACTGTCAAAGCAAAGACAAATGTGAAATTGTGGGGCATCGAC
CGAGACAGCTATAGAAGAATCCTCATGGGAAGCACACTGAGAAAGCGGAAGATGTATGAGGAATTCCTTA
GTAAAGTCTCTATTTTAGAGTCTCTGGACAAGTGGGAACGTCTTACGGTAGCTGATGCATTGGAACCAGT
GCAGTTTGAAGATGGGCAGAAGATTGTGGTGCAGGGAGAACCAGGGGATGAGTTCTTCATTATTTTAGAG
GGGTCAGCTGCTGTGCTACAACGTCGGTCAGAAAATGAAGAGTTTGTTGAAGTGGGAAGATTGGGGCCTT
CTGATTATTTTGGTGAAATTGCACTACTGATGAATCGTCCTCGTGCTGCCACAGTTGTTGCTCGTGGCCC
CTTGAAGTGCGTTAAGCTGGACCGACCTAGATTTGAACGTGTTCTTGGCCCATGCTCAGACATCCTCAAA
CGAAACATCCAGCAGTACAACAGTTTTGTGTCACTGTCTGTCTGAAATCCGCCTCCTGTGCCTCCCTTTT
CTCCTCTCCCCAATCCATGCTTCACTCATGCAAACTGCTTTATTTTCCCTACTTGCAGCGCCAAGTGGCC
ACTGGCATCGCAGCTTCCTGTCTGTTTATATATTGAAAGTTGCTTTTATTGCACCATTTTCAATTTGGAG
CATTAACTAAATGCTCATACACAGTTAAATAAATAGAAAGAGTTCTATGG

Human PRKAR1A mRNA sequence - var8 (public gi: 1658305) (SEQ ID NO: 118)
AGAGGCGTCAAGGGAGGCCGGAGGGAGAGTGGGGTGGACAGAGGAGCGGAGGGACGAGAGGGAAGCGCAC
GATAGCTGCGCGGAGAGAGAGCGAAGAGCAGGAGGAGGAACAAAGGCGACCCAAGACACCCAGAGAGGGA
CAGAGAACCATGGAGTCTGGCAGTACCGCCGCCAGTGAGGAGGCACGCAGCCTTCGAGAATGTGAGCTCT

Figure 36 part - 65

ACGTCCAGAAGCATAACATTCAAGCGCTGCTCAAAGATTCTATTGTGCAGTTGTGCACTGCTCGACCTGA
GAGACCCATGGCATTCCTCAGGGAATACTTTGAGAGGTTGGAGAAGGAGGAGGCAAAACAGATTCAGAAT
CTGCAGAAAGCAGGCACTCGTACAGACTCAAGGGAGGATGAGATTTCTCCTCCTCCACCCAA

Human PRKAR1A protein sequence - var1 (public gi: 4506063) (SEQ ID NO: 264)
MESGSTAASEEARSLRECELYVQKHNIQALLKDSIVQLCTARPERPMAFLREYFERLEKEEAKQIQNLQK
AGTRTDSREDEISPPPPNPVVKGRRRRGAISAEVYTEEDAASYVRKVIPKDYKTMAALAKAIEKNVLFSH
LDDNERSDIFDAMFSVSFIAGETVIQQGDEGDNFYVIDQGETDVYVNNEWATSVGEGGSFGELALIYGTP
RAATVKAKTNVKLWGIDRDSYRRILMGSTLRKRKMYEEFLSKVSILESLDKWERLTVADALEPVQFEDGQ
KIVVQGEPGDEFFIILEGSAAVLQRRSENEEFVEVGRLGPSDYFGEIALLMNRPRAATVVARGPLKCVKL
DRPRFERVLGPCSDILKRNIQQYNSFVSLSV

Human PRKAR1A protein sequence - var2 (public gi: 1658306) (SEQ ID NO: 265)
MESGSTAASEEARSLRECELYVQKHNIQALLKDSIVQLCTARPERPMAFLREYFERLEKEEAKQIQNLQK
AGTRTDSREDEISPPPP

Human PRKAR1A pray sequence - var1 (SEQ ID NO: 119)
GCCGCCTGGTNTACCCATACGACGTACCAGTATTACGCTCATATGGCCATGGCAGGCCAGTGCAATTCCA
CCCAAGCAGTGGCTATCAACGCAGAGTGGTAGCGGGGCATGGGAGCAAAGCAGCATGAGGGAGCTCGGTA
CNCCGCCGCCTCNCACCCGCAGCCTCGCGCCCGCCGCCGCCCGTCCCCAGNGAACCATGGAGTCTGGCAG
TACCGTTTCCAGTGAGGAGGCACNCAGCCTTCGAGAATGTGAGCTCTNNGTCCAGAAGCATNACATTCAN
TGCGCTNCTCAAAGATTCTNTTGTGCANTTGTGCNCTGCTCGACCTNAGAGACCGGGTGGCATTCCTCAN
GGAATACTTGGCGNACGNNGNNTAATGANGAGGCCCNNTNTNTTNCAAANTCTNCANNTNTTTNNNTCTT
TNACAAACTTTTTGGACNATNANNNANCCCNTNNNANANAAANAANAATNNCTTCCCCGGGGGNATTCCT
NCCC

Human PRKAR1A pray sequence - var2 (SEQ ID NO: 120)
GAGCGCCGCCATGGNANTACCCATACGACGTACCAGNATTACGCTCATATGGCCATGGAGGCCAGTGAAT
TCCACCCAAGCAGTGGTATCAACGCAGAGTGGTAGCGGGGCTGGGAGCAAAGCGCTGAGGGAGCTCGGTA
CGCCGCCGCCTCGCACCCGCAGCCTCGCGCCCGCCGCCGCCCGTCCCCAGAGAACCATGGAGTCTGGCAG
TACCGCCGCCAGTGAGGAGGCACGCAGCCTTCGAGAATGTGAGCTCTACGTCCAGAAGCATAACATTCAA
GCGCTGCTCAAAGATTCTATTGTGCAGTTGTGCACTGCTCGACCTGAGAGACCCATGGCATTCCTCAGGG
AATACTTTGAGAGGTTGGAGAAGGAGGAGGCAAAACAGATTCAGAATCTGCAGAAAGCAGGCACTCGTAC
AGACTCAAGGGAGGATGAGATTTCTCCTCCTCCACCCAACCCAGTGGTTAAAGGTAGGAGGCGACGAGGT
GCTATCAGCGCTGAGGTCTACACGGAGGAAGATGCGGCATCCTATGTTAGAAAGGTTATACCAAAAGATT
ACAAGACGATGGCCGCTTTAGCCAAAGCCATTGAAAAGAATGTGCTGTTTTCACATCTTGATGATAATGA
GAGAAGTGATATTTTTGATGCCATGTTTTCGGTCTCCTTTATCGCAGGAGAGACTGTGATTCANCAAGGT
GATGAAGGGGATAACTTCTATGTGATTGATCAAGGANAGACNGATGTCTATGTTAACAATGAATGGGCNA
CCANTGTTGGGGAAGGAGGGAGCTTTGGAAAACTTGCTTTGATTNANGGAANCCNNNNGCNNCCNTNGTC
AAACCAAAACAAA

Human PRKAR1A pray sequence - var3 (SEQ ID NO: 121)
CGACGCCGCCTGGTATACCCATACGACGTACCAGTATTACGCTCATATGGCCATGGCAGGCCAGTGAATT
CCACCCAAGCAGGTGCGATATGCATACGCGAGNAGTGAGTAACGGCGGCTGGGTAGCGAAGTCGCTGAGG
GAGCTCGGTACNCCGCCAGCGCTCGCACCCGCANCCTCGCGCCCGCCGCCCGTCCCCAGAGAACCAT
GGAGTCTGGCAGTACCGCCGCCAGTGAGGAGGCACGCAGCCTTCGAGAATGTGAGCTCTACGTCCAGAAG
CATAACATTCAAGCGCTGCTCAAAGATTCTATTGTGCAGTTGTGCACTGCTCGACCTGAGAGACCCATGG
CATTCCTCAGGGAATACTTTGAGAGGTTGGAGAAGGAGGAGGCAAAACAGATTCAGAATCTGCAGAAAGC
AGGCACTCGTACAGACTCAAGGGAGGATGAGATTTCTCCTCCTCCACCCAACCCAGTGGTTAAAGGTAGG
AGGCGACGAGGTGCTATCAGCGCTGAGGTCTACACGGAGGAAGATGCGGCATCCTATGTTAGAAAGGTAG
TTTTTGATATTTGAATATCGGGGGGGATGCTTTNGGGACCCACTTGGTGGTCATCTANTCTCCTTGGATG
ANTGATTCTTAAATCCAAAACNGGGNGGAACTTCATCNNNCTTNTANANTNNTGGGNNCTGGAAAAANGG
TTTTTNTAATACCNNCTTNNCAANGAAANANCNNTTNGNGTTTTNAANNNNGGAAAANTGGCTTTNGGGG
GTTNNNNTTTCCNTCNNNNTNTTTTNNNNAAAAAGGGNGGGGGCGGTTNG

Human PRKAR1A pray sequence - var4 (SEQ ID NO: 122)
CGTANCNNCGCGNGACTCGGTGACTGANGCCATGATCGCACATTACACACTATNTACCGTCTGACATCAT
GGNTCAGTGTGCAGGGCCATGTTGANNTCTCCNCNCCATANATACAAGGNCTCAAGNNGNACANAACAAT
AGAGANATATTTTTANTACTNACTCACTATAGGGCGAGCGCCGCCATGGAGTACCCATACGACGTNCCAG
ATTACGCTCATATGGCCATGGAGGCCAGTGAATTCCACCCAAGCAGTGGTATCAACGCAGAGTGGAGCGG
GGCTGGGAGCAAAGCGCTGAGGGAGCTCGGTACGCCGCCGCCTCGCACCCGCAGCCTCGCGCCCGCCGCC

Figure 36 part - 66

GCCCGTCCCCAGAGAACCATGGAGTCTGGCNGTACCGCCNNTANTGNGGAGGCACGCAGCCTTNNAGAAT
GTGAGCTCTACGTCCAGAAGCATAACATNNGNGCGCTGCTCAAAGATTCTATTGTGCAGTTGTGCACTGC
TCGACCTGAGAGACCCATGGCATTCCTCAGGGAATTACTTTGAGAGGTTGGANNAGGAGGAGGCNAACCA
NATTCANAATCTGCNGAAAGCANNANTCNTACAGACTCAGGGGNGGNNANATTTTTTATTCTTCCCCCCA
NCCNANTGGTTAAGGGTNGGAGGCNACAAGGNCTNTTNNCCCCTGAAGGNNTNCCCGGNGGAAGATNCGG
ATTCCTATGTTAAAANGGGTNTTTCCNNTANNNATTNCNANNAANANGGCCCCTTTTNNCCCAAANCCCT
TCNAAAAAAAANGNGCNNTTTCCNANTNTNNGNGAANTTNNAAAAAGNGGNTTTTTTTTAAANCCCNTTTT
TNNCGTTNTCTTTTTCNGGNGGAAACNTTNATTAANNCCG

Unigene Name: PRKARIA Unigene ID: Hs.183037 Clone ID: 3GD_188

Human PRKARIA mRNA sequence - var1 (public gi: 23273779) (SEQ ID NO: 396)
GGTGGAGCTGTCGCCTAGCCGCTATCGCAGAGTGGAGCGGGGCTGGGAGCAAAGCGCTGAGGGAGCTCGG
TACGCCGCCGCCTCGCACCCGCAGCCTCGCGCCCGCCGCCGCCCGTCCCCAGAGAACCATGGAGTCTGGC
AGTACCGCCGCCAGTGAGGAGGCACGCAGCCTTCGAGAATGTGAGCTCTACGTCCAGAAGCATAACATTC
AAGCGCTGCTCAAAGATTCTATTGTGCAGTTGTGCACTGCTCGACCTGAGAGACCCATGGCATTCCTCAG
GGAATACTTTGAGAGGTTGGAGAAGGAGGAGGCAAAACAGATTCAGAATCTGCAGAAAGCAGGCACTCGT
ACAGACTCAAGGGAGGATGAGATTTCTCCTCCTCCACCCAACCCAGTGGTTAAAGGTAGGAGGCGACGAG
GTGCTATCAGCGCTGAGGTCTACACGGAGGAAGATGCGGCATCCTATGTTAGAAAGGTTATACCAAAAGA
TTACAAGACAATGGCCGCTTTAGCCAAAGCCATTGAAAAGAATGTGCTGTTTTCACATCTTGATGATAAT
GAGAGAAGTGATATTTTTGATGCCATGTTTTCGGTCTCCTTTATCGCAGGAGAGACTGTGATTCAGCAAG
GTGATGAAGGGGATAACTTCTATGTGATTGATCAAGGAGAGACGGATGTCTATGTTAACAATGAATGGGC
AACCAGTGTTGGGGAAGGAGGGAGCTTTGGAGAACTTGCTTTGATTTATGGAACACCGAGAGCAGCCACT
GTCAAAGCAAAGACAAATGTGAAATTGTGGGGCATCGACCGAGACAGCTATAGAAGAATCCTCATGGGAA
GCACACTGAGAAAGCGGAAGATGTATGAGGAATTCCTTAGTAAAGTCTCTATTTTAGAGTCTCTGGACAA
GTGGGAACGTCTTACGGTAGCTGATGCATTGGAACCAGTGCAGTTTGAAGATGGGCAGAAGATTGTGGTG
CAGGGAGAACCAGGGGATGAGTTCTTCATTATTTTAGAGGGGTCAGCTGCTGTGCTACAACGTCGGTCAG
AAAATGAAGAGTTTGTTGAAGTGGGAAGATTGGGGCCTTCTGATTATTTTGGTGAAATTGCACTACTGAT
GAATCGTCCTCGTGCTGCCACAGTTGTTGCTCGTGGCCCCTTGAAGTGCGTTAAGCTGGACCGACCTAGA
TTTGAACGTGTTCTTGGCCCATGCTCAGACATCCTCAAACGAAACATCCAGCAGTACAACAGTTTTGTGT
CACTGTCTGTCTGAAATCTGCCTCCTGTGCCTCCCTTTTCTCCTCTCCCCAATCCATGCTTCACTCATGC
AAACTGCTTTATTTTCCCTACTTGCAGCGCCAAGTGGCCACTGGCATCGCAGCTTCCTGTCTGTTTATAT
ATTGAAAGTTGCTTTTATTGCACCATTTTCAATTTGGAGCATTAACTAAATGCTCATACACAGTTAAATA
AATAGAAAGAGTTCTATGGAGACTTTGCTGTTACTGCTTCTCTTTGTGCAGTGTTAGTATTCACCCTGGG
CAGTGAGTGCCATGCTTTTTGGTGAGGGCAGATCCCAGCACCTATTGAATTACCATAGAGTAATGATGTA
ACAGTGCAAGATTTTTTTTTTAAGTGACATAATTGTCCAGTTATAAGCGTATTTAGACTGTGGCCATATA
TGCTGTATTTCTTTGTAGAATAAATGGTTTCTCATTAAACTCTAAAGATTAGGGAAAATGGATATAGAAA
ATCTTAGTATAGTAGAAAGACATCTGCCTGTAATTAAACTAGTTTAAGGGTGGAAAAATGCCCATTTTTG
CTAATTATCAATGGGATATGATTGGTTCAGTTTTTTTTTTTCCAGAGTTGTTGTTTGCCAAGCTAATCTG
CCTGGTTTTATTTATATCTTGTTATTAATGTTTCTTCTCCAATTCTGAAATACTTTTGAGTATGGCTATC
TATACCTGCCTTTTAAGTTTGAAACTAACTCATAGATTGCAAATATTGGTTAGTATTTAACTACATCTGC
CTCGGCTCACAAATTCCGATTAGACCTTTATCCAGCTAGTGCCAAATAATTGATCAGATGCTGAATTGAG
AATAAGAATTTGAGGTCTACATTCTTGGTTGTTAATTTAGAGCGTTTGGTTAAAGTATGTCCTTCAGCTG
ACTCCAGTATAATCTCCTCTGCTCATTAAACTGATTCCAGGAGATTGGATTTGCTGTGACTAGATACAGA
TGGAGCAAATGTCCTAACAGAGAAATAGAGGTGATGCTGCTAAAGGGAGAAATGCCAGGCGGACAAAGTT
CAGTGTCGGGAATTTTCCCCGTGACATTCACTGGGGCATGAGATTTTGGAAGAAGTTTTTTACTTTGGTT
TAGTCTTTTTTTCCTTCCTTTTTATTCAGCTAGAATTTCTGGTGGGTTGATGGTAGGGTATAATGTGTCT
GTGTTGCTTCAAATTGGTCTGAAAGGCTATCCTGCGGAAAGTCCTGCTTTCCTATCTAGCATTTATTTCT
CTGGCAAACTTTTCTTTCTTTTCTTTTTTAAAGTAAACTTGTGTATTGAGTCTTAACTGTATTTCAGTAT
TTTCCAGCCTTATGTGTTACATTATTCCAATGATACCCAACAGTTTATTTTTATTATTTTTTTAAACAAA
ATTTCACAGTTCTGTAATGTAGGCACTTTTATTTTCATTGTGATTTATATATAAGGTAATGTAGGGTTAT
ATTTGGGAGTGACTGCAAGCATTTTTCCATCTGTGTGCAACTAACTGACTCTGTTATTGATCCCTTCTCC
TGCCCTTTCCCAGGTAATTTAAATTGGTCATGGTAGATTTTTTTCATAGATTTGAAAAACTTTTAGGTTG
TTACCAAGTATGAAGTATAAATCTGGGGAAGAGGTTTTATTTACATTTTAGGGTGGGTAAGAAAGCCACC
TTGTTACAAATTTTTTAATTTCCAAAATAATCTATATTAAATGAGGGTTTCTGATCTGTACTTTGTGTTT
AGCTACCTTTTTATATTTAAAAAATTAAAAATGAAAATTACGTTCTTACAAGCTTAAAGCTTGATTTGAT
CTTTGTTTAAATGCCAAAATGTACTTAAATGAGTTACTTAGAATGCCATAAAATTGCAGTTTCATGTATG

Figure 36 part - 67

TATATAATCATGCTCATGTATATTTAGTTACGTATAATGCTTTCTGAGTGAGTTTTACTCTTAAATCATT
TGGTTAAATCATTTGGCTTGCTGTTTACTCCCTTCTGTAGTTTTTAATTAAAAACTTTAAAGATAAGTCT
ACATTAAACAATGATCACATCTAAAGCTTTATCTTTGTGTAATCTAAGTATATGTGAGAAATCAGAATTG
GCATAATTTGTCTTAGTTGATATTCAAGGCTTTAAAAGTCATTATTCCTGGGCTTGGTAAGTGAATTTAT
GAGATTTACTGCTCTAGAAAGTATAGATGGCGAAAGGACCGTTTTGTATTGCTTCCTGATTACCAGTCTG
ATTATACCATGTGTGCTAATATACTTTTTTTGTTATAGATTGTCTTAATGGTAGGTCAAGTAATAAAAAG
AGATGAAATAATTTAAAAAAAAAAAAAAA

Human PRKARIA mRNA sequence - (public gi: 4506062) (SEQ ID NO: 397)

GCTGGGAGCAAAGCGCTGAGGGAGCTCGGTACGCCGCCGCCTCGCACCCGCAGCCTCGCGCCCGCCGCCG
CCCGTCCCCAGAGAACCATGGAGTCTGGCAGTACCGCCGCCAGTGAGGAGGCACGCAGCCTTCGAGAATG
TGAGCTCTACGTCCAGAAGCATAACATTCAAGCGCTGCTCAAAGATTCTATTGTGCAGTTGTGCACTGCT
CGACCTGAGAGACCCATGGCATTCCTCAGGGAATACTTTGAGAGGTTGGAGAAGGAGGAGGCAAAACAGA
TTCAGAATCTGCAGAAAGCAGGCACTCGTACAGACTCAAGGGAGGATGAGATTTCTCCTCCTCCACCCAA
CCCAGTGGTTAAAGGTAGGAGGCGACGAGGTGCTATCAGCGCTGAGGTCTACACGGAGGAAGATGCGGCA
TCCTATGTTAGAAAGGTTATACCAAAAGATTACAAGACAATGGCCGCTTTAGCCAAAGCCATTGAAAAGA
ATGTGCTGTTTTCACATCTTGATGATAATGAGAGAAGTGATATTTTTGATGCCATGTTTTCGGTCTCCTT
TATCGCAGGAGAGACTGTGATTCAGCAAGGTGATGAAGGGGATAACTTCTATGTGATTGATCAAGGAGAG
ACGGATGTCTATGTTAACAATGAATGGGCAACCAGTGTTGGGGAAGGAGGGAGCTTTGGAGAACTTGCTT
TGATTTATGGAACACCGAGAGCAGCCACTGTCAAAGCAAAGACAAATGTGAAATTGTGGGGCATCGACCG
AGACAGCTATAGAAGAATCCTCATGGGAAGCACACTGAGAAAGCGGAAGATGTATGAGGAATTCCTTAGT
AAAGTCTCTATTTTAGAGTCTCTGGACAAGTGGGAACGTCTTACGGTAGCTGATGCATTGGAACCAGTGC
AGTTTGAAGATGGGCAGAAGATTGTGGTGCAGGGAGAACCAGGGGATGAGTTCTTCATTATTTTAGAGGG
GTCAGCTGCTGTGCTACAACGTCGGTCAGAAAATGAAGAGTTTGTTGAAGTGGGAAGATTGGGGCCTTCT
GATTATTTTGGTGAAATTGCACTACTGATGAATCGTCCTCGTGCTGCCACAGTTGTTGCTCGTGGCCCCT
TGAAGTGCGTTAAGCTGGACCGACCTAGATTTGAACGTGTTCTTGGCCCATGCTCAGACATCCTCAAACG
AAACATCCAGCAGTACAACAGTTTTGTGTCACTGTCTGTCTGAAATCTGCCTCCTGTGCCTCCCTTTTCT
CCTCTCCCCAATCCATGCTTCACTCATGCAAACTGCTTTATTTTCCCTACTTGCAGCGCCAAGTGGCCAC
TGGCATCGCAGCTTCCTGTCTGTTTATATATTGAAAGTTGCTTTTATTGCACCATTTTCAATTTGGAGCA
TTAACTAAATGCTCATACACAGTTAAATAAATAGAAAGAGTTCTATGGAGACTTTGCTGTTACTGCTTCT
CTTTGTGCAGTGTTAGTATTCACCCTGGGCAGTGAGTGCCATGCTTTTTGGTGAGGGCAGATCCAGCACC
TATTGAATTACCATAGAGTAATGATGTAACAGTGCAAGATTTTTTTTTTTAAGTGACATAATTGTCCAGT
TATAAGCGTATTTAGACTGTGGCCATATATGCTGTATTTCTTTGTAGAATAAATGGTTTCTCATTAAACT
CTAAAGATTAGGGAAATGGATATAGAAAATCTTAGTATAGTAGAAAGACATCTGCCTGTAATTAAACTAG
TTTAAGGGTGGAAAAATGAAAATTTTTGCTAATTATCAATGGGATATGATTGGTTCAGTTTTTTTTTTCC
AGAGTTGTTGTTTGCCAAGCTAATCTGCCTGGTTTATTTATATCTTGTTATTAATGTTTCTTCTCCAATT
CTGAAATACTTTTGAGTATGGCTATCTATACCTGCCTTTTAAGTTTGAAACTAACTCATAGATGCAAATA
TTGGTTAGTATTTAACTACATCTGCCTCGGCTCACAAATTCCGATTAGACCTTTATCCAGCTAGTGCCAA
ATAATTGATCAGATGCTGAATTGAGAATAAGAATTTGAGGTCTACATTCTTGGTTGTTAATTTAGAGCGT
TTGGTTAAAGTATGTCCTTCAGCTGACTCCAGTATAATCTCCTCTGCTCATTAAACTGATTCCAGGAGAT
TGGATTTGCTGTGACTAGATACAGATGGAGCAAATGTCCTAACAGAGAAATAGAGGTGATGCTGCTAAAG
GGAGAAATGCCAGGCGGACAAAGTTCAGTGTCGGGAATTTTCCCCGTGACATTCACTGGGGCATGAGATT
TTGGAAGAAGTTTTTTACTTTGGTTTAGTCTTTTTTTCCTCCTTTTTATTCAGCTAGAATTTCTGGTGGG
TTGATGGTAGGGTATAATGTGTCTGTGTTGCTTCAAATTGGTCTGAAAGGCTATCCTGCTGAAAGTCCTG
CTTTCCTATCTAGCATTTATTCCTCTGGCAAACTTTTCTTTCTTTTCTTTTTTAAAGTAAACTTGTGTAT
TGAGTCTTAACTGTATTTCAGTATTTTCCAGCCTTATGTGTTACATTATTCCAATGATACCCAACAGTTT
ATTTTTATTATTTTTTTAAACAAAATTTCACAGTTCTGTAATGTAGGCACTTTTATTTTCATTGTGATTT
ATATATAAGGTAATGTAGGGTTATATTTGGGAGTGACTGCAAGCATTTTTCCATCTGTGTGCAACTAACT
GACTCTGTTATTGATCCCTTCTCCTGCCCTTTCCCAGGTAATTTAAATTGGTCATGGTAGATTTTTTTCA
TAGATTTGAAAAACTTTTAGGTTGTTACCAAGTATGAAGTATAAATCTGGGGAAGAGGTTTTATTTACAT
TTTAGGGTGGGTAAGAAAGCCACCTTGTTACAAATTTTTTAATTTCCAAAATAATCTATATTAAATGAGG
GTTTCTGATCTGTACTTTGTGTTTAGCTACCTTTTTATATTTAAAAAATTAAAAATGAAAATTATGTTCT
TACAAGCTTAAAGCTTGATTTGATCT

Unigene Name: PTPN12 Unigene ID: Hs.62

Figure 36 part - 68

Human PTPN12 mRNA sequence - var1 (public gi: 292408) (SEQ ID NO: 123)

AGCGACCGCAGCCGGGGGGACGCGGGAGGATGGAGCAAGTGGAGATCCTGAGGAAATTCATCCAGAGGGT
CCAGGCCATGAAGAGTCCTGACCACAATGGGGAGGACAACTTCGCCCGGGACTTCATGCGGTTAAGAAGA
TTGTCTACCAAATATAGAACAGAAAAGATATATCCCACAGCCACTGGAGAAAAAGAAGAAAATGTTAAAA
AGAACAGATACAAGGACATACTGCCATTTGATCACAGCCGAGTTAAATTGACATTAAAGACTCCTTCACA
AGATTCAGACTATATCAATGCAAATTTTATAAAGGGCGTCTATGGGCCAAAAGCATATGTAGCAACTCAA
GGACCTTTAGCAAATACAGTAATAGATTTTTGGAGGATGATATGGGAGTATAATGTTGTGATCATTGTAA
TGGCCTGCCGAGAATTTGAGATGGGAAGGAAAAAATGTGAGCGCTATTGGCCTTTGTATGGAGAAGACCC
CATAACGTTTGCACCATTTAAAATTTCTTGTGAGGATGAACAAGCAAGAACAGACTACTTCATCAGGACA
CTCTTACTTGAATTTCAAAATGAATCTCGTAGGCTGTATCAGTTTCATTATGTGAACTGGCCAGACCATG
ATGTTCCTTCATCATTTGATTCTATTCTGGACATGATAAGCTTAATGAGGAAATATCAAGAACATGAAGA
TGTTCCTATTTGTATTCATTGCAGTGCAGGCTGTGGAAGAACAGGTGCCATTTGTGCCATAGATTATACG
TGGAATTTACTAAAAGCTGGGAAAATACCAGAGGAATTTAATGTATTTAATTTAATACAAGAAATGAGAA
CACAAAGGCATTCTGCAGTACAAACAAAGGAGCAATATGAACTTGTTCATAGAGCTATTGCCCAACTGTT
TGAAAAACAGCTACAACTATATGAAATTCATGGAGCTCAGAAAATTGCTGATGGAGTGAATGAAATTAAC
ACTGAAAACATGATCAGCTCCATAGAGCCTGAAAAACAAGATTCTCCTCCTCCAAAACCACCAAGGACCC
GCAGTTGCCTTGTTGAAGGGGATGCTAAAGAAGAAATACTGCAGCCACCGGAACCTCATCCAGTGCCACC
CATCTTGACACCTTCTCCCCCTTCAGCTTTTCCAACAGTCACTACTGTGTGGCAGGACAATGATAGATAC
CATCCAAAGCCAGTGTTGCATATGGTTTCATCAGAACAACATTCAGCAGACCTCAACAGAAACTATAGTA
AATCAACAGAACTTCCAGGGAAAAATGAATCAACAATTGAACAGATAGATAAAAAATTGGAACGAAATTT
AAGTTTTGAGATTAAGAAGGTCCCTCTCCAAGAGGGACCAAAAAGTTTTGATGGGAACACACTTTTGAAT
AGGGGACATGCAATTAAAATTAAATCTGCTTCACCTTGTATAGCTGATAAAATCTCTAAGCCACAGGAAT
TAAGTTCAGATCTAAATGTCGGTGATACTTCCCAGAATTCTTGTGTGGACTGCAGTGTAACACAATCAAA
CAAAGTTTCAGTTACTCCACCAGAAGAATCCCAGAATTCAGACACACCTCCAAGGCCAGACCGCTTGCCT
CTTGATGAGAAAGGACATGTAACGTGGTCATTTCATGGACCTGAAAATGCCATACCCATACCTGATTTAT
CTGAAGGCAATTCCTCAGATATCAACTATCAAACTAGGAAAACTGTGAGTTTAACACCAAGTCCTACAAC
ACAAGTTGAAACACCTGATCTTGTGGATCATGATAACACTTCACCACTCTTCAGAACACCCCTCAGTTTT
ACTAATCCACTTCACTCTGATGACTCAGACTCAGATGAAAGAAACTCTGATGGTGCTGTGACCCAGAATA
AAACTAATATTTCAACAGCAAGTGCCACAGTTTCTGCTGCCACTAGTACTGAAAGCATTTCTACTAGGAA
AGTATTGCCAATGTCCATTGCTAGACATAATATAGCAGGAACAACACATTCAGGTGCTGAAAAAGATGTT
GATGTTAGTGAAGATTCACCTCCTCCCCTACCTGAAAGAACTCCTGAATCGTTTGTGTTAGCAAGTGAAC
ATAATACACCTGTAAGATCGGAATGGAGTGAACTTCAAAGTCAGGAACGATCTGAACAAAAAAAGTCTGA
AGGCTTGATAACCTCTGAAAATGAGAAATGTGATCATCCAGCGGGAGGTATTCACTATGAAATGTGCATA
GAATGTCCACCTACTTTCAGTGACAAGAGAGAACAAATATCAGAAAATCCAACAGAAGCCACAGATATTG
GTTTTGGTAATCGATGTGGAAAACCCAAAGGACCAAGAGATCCACCTTCAGAATGGACATGATTCAGGGA
GCTAGAAGACACTTTAAGTTATACTGGAAAATTCAGGTGCCACTGAAAGCCAGATTTATAGTATTCCATC
TTTAATATGTGGGACTAACAGCAGTGTAGATTGTTACCTTAATATTTTTTGCTGGGACCATCTACCTGCC
TTATACTACACTTAGGAAAAAGTATTACATATGGTTTATTTTGAAACTTCAAGTATTATTGCCTTAATGT
CTCTTAACCCTGTTACACGCTGCTTGTAGACATGTTAATATAGTAATACCTTTATGATATATTGAGTTTA
AGGACTACTCTTTTTCTGTTTTATCATGTATGCATTATTTTGTATATGTACAGGGCAAGTAGGTATATAA
TTTGATAAAGTTGCAATTGAAATATTATTAACAGAAGATGTAAGAAATTTCTGCATGGTCTAAATCTTTG
TGTACTTTATTTGTAAATTATTTGCCCTGGAGTTTTAGAAAATAGTTTCTGAATTTTAAACTTGCTGGAT
TCATGCAGCCAGCTTTGCAGGTTATCAGAGATCAAAGATTGTAATAATAATTTTGTAAATTGTAAGCAAA
AAGTTATTTTTATATTATATACAGTCTAATTGTTCATCCTAATTGTTCCTGTTTTCATCTAGTCAGAGAT
TCAGTAAGTGCCTTGGAACAATATTGAATTCTCTTAGCTTGTGTGTGTTTCTTTAATATTTGAACTCAAG
TGGGATTAGAAGACTATCAAAATACATGTATGTTTCAGATATTTGACCTGTCATTAAAAAAAACAAACAG
TTTTACAGTG

Human PTPN12 mRNA sequence - var2 (public gi: 29476876) (SEQ ID NO: 124)

GGGGAGAGGCGGCTGCGGCTGCGGCTGCGGCTGCTGGCGGGGGGTGGGGGGGAGGAGGAACCGGGAAGGG
GGGGCAGGGCGAGCGGAGAGCTAGCTGTGTTCCTGAGGCGCAGCCGCCGCCTAGGGCGGTGGGGAGGAGG
AGGGAGCCGCGGGGCTTGGCGGGGTCGGGAGGGAGGGACGTGCTGGGGGAACGAGCTGGGGAAGACGGAG
CGGGCTCTGTGCCGGGCGGGCGGGCGGCGGGGGGGCCAGCGACCGCAGCCGGGGGGACGCGGGAGGATGG
AGCAAGTGGAGATCCTGAGGAAATTCATCCAGAGGGTCCAGGCCATGAAGAGTCCTGACCACAATGGGGA
GGACAACTTCGCCCGGGACTTCATGCGGTTAAGAAGATTGTCTACCAAATATAGAACAGAAAAGATATAT
CCCACAGCCACTGGAGAAAAAGAAGAAAATGTTAAAAAGAACAGATACAAGGACATACTGCCATTTGATC
ACAGCCGAGTTAAATTGACATTAAAGACTCCTTCACAAGATTCAGACTATATCAATGCAAATTTTATAAA
GGGCGTCTATGGGCCAAAAGCATATGTAGCAACTCAAGGACCTTTAGCAAATACAGTAATAGATTTTTGG
AGGATGATATGGGAGTATAATGTTGTGATCATTGTAATGGCCTGCCGAGAATTTGAGATGGGAAGGAAAA
AATGTGAGCGCTATTGGCCTTTGTATGGAGAAGACCCCATAACGTTTGCACCATTTAAAATTTCTTGTGA
GGATGAACAAGCAAGAACAGACTACTTCATCAGGACACTCTTACTTGAATTTCAAAATGAATCTCGTAGG
CTGTATCAGTTTCATTATGTGAACTGGCCAGACCATGATGTTCCTTCATCATTTGATTCTATTCTGGACA

Figure 36 part - 69

TGATAAGCTTAATGAGGAAATATCAAGAACATGAAGATGTTCCTATTTGTATTCATTGCAGTGCAGGCTG
TGGAAGAACAGGTGCCATTTGTGCCATAGATTATACGTGGAATTTACTAAAAGCTGGGAAAATACCAGAG
GAATTTAATGTATTTAATTTAATACAAGAAATGAGAACACAAAGGCATTCTGCAGTACAAACAAAGGAGC
AATATGAACTTGTTCATAGAGCTATTGCCCAACTGTTTGAAAAACAGCTACAACTATATGAAATTCATGG
AGCTCAGAAAATTGCTGATGGAGTGAATGAAATTAACACTGAAAACATGATCAGCTCCATAGAGCCTGAA
AAACAAGATTCTCCTCCTCCAAAACCACCAAGGACCCGCAGTTGCCTTGTTGAAGGGGATGCTAAAGAAG
AAATACTGCAGCCACCGGAACCTCATCCAGTGCCACCCATCTTGACACCTTCTCCCCCTTCAGCTTTTCC
AACAGTCACTACTGTGTGGCAGGACAATGATAGATACCATCCAAAGCCAGTGTTGCATATGGTTTCATCA
GAACAACATTCAGCAGACCTCAACAGAAACTATAGTAAATCAACAGAACTTCCAGGGAAAAATGAATCAA
CAATTGAACAGATAGATAAAAAATTGGAACGAAATTTAAGTTTTGAGATTAAGAAGGTCCCTCTCCAAGA
GGGACCAAAAAGTTTTGATGGGAACACACTTTTGAATAGGGGACATGCAATTAAAATTAAATCTGCTTCA
CCTTGTATAGCTGATAAAATCTCTAAGCCACAGGAATTAAGTTCAGATCTAAATGTCGGTGATACTTCCC
AGAATTCTTGTGTGGACTGCAGTGTAACACAATCAAACAAAGTTTCAGTTACTCCACCAGAAGAATCCCA
GAATTCAGACACACCTCCAAGGCCAGACCGCTTGCCTCTTGATGAGAAAGGACATGTAACGTGGTCATTT
CATGGACCTGAAAATGCCATACCCATACCTGATTTATCTGAAGGCAATTCCTCAGATATCAACTATCAAA
CTAGGAAAACTGTGAGTTTAACACCAAGTCCTACAACACAAGTTGAAACACCTGATCTTGTGGATCATGA
TAACACTTCACCACTCTTCAGAACACCCCTCAGTTTTACTAATCCACTTCACTCTGATGACTCAGACTCA
GATGAAAGAAACTCTGATGGTGCTGTGACCCAGAATAAAACTAATATTTCAACAGCAAGTGCCACAGTTT
CTGCTGCCACTAGTACTGAAAGCATTTCTACTAGGAAAGTATTGCCAATGTCCATTGCTAGACATAATAT
AGCAGGAACAACACATTCAGGTGCTGAAAAAGATGTTGATGTTAGTGAAGATTCACCTCCTCCCCTACCT
GAAAGAACTCCTGAATCGTTTGTGTTAGCAAGTGAACATAATACACCTGTAAGATCGGAATGGAGTGAAC
TTCAAAGTCAGGAACGATCTGAACAAAAAAAGTCTGAAGGCTTGATAACCTCTGAAAATGAGAAATGTGA
TCATCCAGCGGGAGGTATTCACTATGAAATGTGCATAGAATGTCCACCTACTTTCAGTGACAAGAGAGAA
CAAATATCAGAAAATCCAACAGAAGCCACAGATATTGGTTTTGGTAATCGATGTGGAAAACCCAAAGGAC
CAAGAGATCCACCTTCAGAATGGACATGATTCAGGGAGCTAGAAGACACTTTAAGTTATACTGGAAAATT
CAGGTGCCACTGAAAGCCAGATTTATAGTATTCCATCTTTAATATGTGGGACTAACAGCAGTGTAGATTG
TTACCTTAATATTTTTTGCTGGGACCATCTACCTGCCTTATACTACACTTAGGAAAAAGTATTACATATG
GTTTATTTTGAAACTTCAAGTATTATTGCCTTAATGTCTCTTAACCCTGTTACACGCTGCTTGTAGACAT
GTTAATATAGTAATACCTTTATGATATATTGAGTTTAAGGACTACTCTTTTTCTGTTTTATCATGTATGC
ATTATTTTGTATATGTACAGGGCAAGTAGGTATATAATTTGATAAAGTTGCAATTGAAATATTATTAACA
GAAGATGTAAGAAATTTCTGCATGGTCTAAATCTTTGTGTACTTTATTTGTAAATTATTTGCCCTGGAGT
TTTAGAAAATAGTTTCTGAATTTTAAACTTGCTGGATTCATGCAGCCAGCTTTGCAGGTTATCAGAGATC
AAAGATTGTAATAATAATTTTGTAAATTGTAAGCAAAAAGTTATTTTTATATTATATACAGTCTAATTGT
TCATCCTAATTGTTCCTGTTTTCATCTAGTCAGAGATTCAGTAAGTGCCTTGGAACAATATTGAATTCTC
TTAGCTTGTGTGTGTTTCTTTAATATTTGAACTCAAGTGGGATTAGAAGACTATCAAAATACATGTATGT
TTCAGGATATTTGACCTGTCATTAAAAAAAACAAACAGTTTTACAGTGCCAAAAAAAAAAAAAAA

Human PTPN12 mRNA sequence - var3 (public gi: 18375651) (SEQ ID NO: 125)

AGCGACCGCAGCCGGGGGGACGCGGGAGGATGGAGCAAGTGGAGATCCTGAGGAAATTCATCCAGAGGGT
CCAGGCCATGAAGAGTCCTGACCACAATGGGGAGGACAACTTCGCCCGGGACTTCATGCGGTTAAGAAGA
TTGTCTACCAAATATAGAACAGAAAAGATATATCCCACAGCCACTGGAGAAAAAGAAGAAAATGTTAAAA
AGAACAGATACAAGGACATACTGCCATTTGATCACAGCCGAGTTAAATTGACATTAAAGACTCCTTCACA
AGATTCAGACTATATCAATGCAAATTTTATAAAGGGCGTCTATGGGCCAAAAGCATATGTAGCAACTCAA
GGACCTTTAGCAAATACAGTAATAGATTTTTGGAGGATGATATGGGAGTATAATGTTGTGATCATTGTAA
TGGCCTGCCGAGAATTTGAGATGGGAAGGAAAAAATGTGAGCGCTATTGGCCTTTGTATGGAGAAGACCC
CATAACGTTTGCACCATTTAAAATTTCTTGTGAGGATGAACAAGCAAGAACAGACTACTTCATCAGGACA
CTCTTACTTGAATTTCAAAATGAATCTCGTAGGCTGTATCAGTTTCATTATGTGAACTGGCCAGACCATG
ATGTTCCTTCATCATTTGATTCTATTCTGGACATGATAAGCTTAATGAGGAAATATCAAGAACATGAAGA
TGTTCCTATTTGTATTCATTGCAGTGCAGGCTGTGGAAGAACAGGTGCCATTTGTGCCATAGATTATACG
TGGAATTTACTAAAAGCTGGGAAAATACCAGAGGAATTTAATGTATTTAATTTAATACAAGAAATGAGAA
CACAAAGGCATTCTGCAGTACAAACAAAGGAGCAATATGAACTTGTTCATAGAGCTATTGCCCAACTGTT
TGAAAAACAGCTACAACTATATGAAATTCATGGAGCTCAGAAAATTGCTGATGGAGTGAATGAAATTAAC
ACTGAAAACATGATCAGCTCCATAGAGCCTGAAAAACAAGATTCTCCTCCTCCAAAACCACCAAGGACCC
GCAGTTGCCTTGTTGAAGGGGATGCTAAAGAAGAAATACTGCAGCCACCGGAACCTCATCCAGTGCCACC
CATCTTGACACCTTCTCCCCCTTCAGCTTTTCCAACAGTCACTACTGTGTGGCAGGACAATGATAGATAC
CATCCAAAGCCAGTGTTGCATATGGTTTCATCAGAACAACATTCAGCAGACCTCAACAGAAACTATAGTA
AATCAACAGAACTTCCAGGGAAAAATGAATCAACAATTGAACAGATAGATAAAAAATTGGAACGAAATTT
AAGTTTTGAGATTAAGAAGGTCCCTCTCCAAGAGGGACCAAAAAGTTTTGATGGGAACACACTTTTGAAT
AGGGGACATGCAATTAAAATTAAATCTGCTTCACCTTGTATAGCTGATAAAATCTCTAAGCCACAGGAAT
TAAGTTCAGATCTAAATGTCGGTGATACTTCCCAGAATTCTTGTGTGGACTGCAGTGTAACACAATCAAA
CAAAGTTTCAGTTACTCCACCAGAAGAATCCCAGAATTCAGACACACCTCCAAGGCCAGACCGCTTGCCT
CTTGATGAGAAAGGACATGTAACGTGGTCATTTCATGGACCTGAAAATGCCATACCCATACCTGATTTAT
CTGAAGGCAATTCCTCAGATATCAACTATCAAACTAGGAAAACTGTGAGTTTAACACCAAGTCCTACAAC

Figure 36 part - 70

ACAAGTTGAAACACCTGATCTTGTGGATCATGATAACACTTCACCACTCTTCAGAACACCCCTCAGTTTT
ACTAATCCACTTCACTCTGATGACTCAGACTCAGATGAAAGAAACTCTGATGGTGCTGTGACCCAGAATA
AAACTAATATTTCAACAGCAAGTGCCACAGTTTCTGCTGCCACTAGTACTGAAAGCATTTCTACTAGGAA
AGTATTGCCAATGTCCATTGCTAGACATAATATAGCAGGAACAACACATTCAGGTGCTGAAAAAGATGTT
GATGTTAGTGAAGATTCACCTCCTCCCCTACCTGAAAGAACTCCTGAATCGTTTGTGTTAGCAAGTGAAC
ATAATACACCTGTAAGATCGGAATGGAGTGAACTTCAAAGTCAGGAACGATCTGAACAAAAAAAGTCTGA
AGGCTTGATAACCTCTGAAAATGAGAAATGTGATCATCCAGCGGGAGGTATTCACTATGAAATGTGCATA
GAATGTCCACCTACTTTCAGTGACAAGAGAGAACAAATATCAGAAAATCCAACAGAAGCCACAGATATTG
GTTTTGGTAATCGATGTGGAAAACCCAAAGGACCAAGAGATCCACCTTCAGAATGGACATGATTCAGGGA
GCTAGAAGACACTTTAAGTTATACTGGAAAATTCAGGTGCCACTGAAAGCCAGATTTATAGTATTCCATC
TTTAATATGTGGGACTAACAGCAGTGTAGATTGTTACCTTAATATTTTTTGCTGGGACCATCTACCTGCC
TTATACTACACTTAGGAAAAAGTATTACATATGGTTTATTTTGAAACTTCAAGTATTATTGCCTTAATGT
CTCTTAACCCTGTTACACGCTGCTTGTAGACATGTTAATATAGTAATACCTTTATGATATATTGAGTTTA
AGGACTACTCTTTTTCTGTTTTATCATGTATGCATTATTTTGTATATGTACAGGGCAAGTAGGTATATAA
TTTGATAAAGTTGCAATTGAAATATTATTAACAGAAGATGTAAGAAATTTCTGCATGGTCTAAATCTTTG
TGTACTTTATTTGTAAATTATTTGCCCTGGAGTTTTAGAAAATAGTTTCTGAATTTTAAACTTGCTGGAT
TCATGCAGCCAGCTTTGCAGGTTATCAGAGATCAAAGATTGTAATAATAATTTTGTAAATTGTAAGCAAA
AAGTTATTTTTATATTATATACAGTCTAATTGTTCATCCTAATTGTTCCTGTTTTCATCTAGTCAGAGAT
TCAGTAAGTGCCTTGGAACAATATTGAATTCTCTTAGCTTGTGTGTGTTTCTTTAATATTTGAACTCAAG
TGGGATTAGAAGACTATCAAAATACATGTATGTTTCAGGATATTTGACCTGTCATTAAAAAAAACAAACA
GTTTTACAGTG

Human PTPN12 mRNA sequence - var4 (public gi: 545651) (SEQ ID NO: 126)
GTTAAAAGGAACAGATACAAGGACATACTGCCATTTGATCACAGCCGAGTTAAATTGACATTAAAGACTC
CTTCACAAGATTCAGACTATATCAATGCAAATTTTATAAAGGGCGTCTATGGGCCAAAAGCATATGTAGC
AACTCAAGGACCTTTAGCAAATACAGTAATAGATTTTTGGAGGATGGTATGGGAGTATAATGTTGTGATC
ATTGTAATGGCCTGCCGAGAATTTGA

Human PTPN12 mRNA sequence - var5 (public gi: 19683965) (SEQ ID NO: 127)
GGGACTTCACCACTCTTCAGAACACCCCTCAGTTTTAGTAATCCACTTCACTCTGATGACTCAGACTCAG
ATGAAAGAAACTCTGATGGTGCTGTGACCCAGAATAAAACTAATATTTCAACAGCAAGTGCCACAGTTTC
TGCTGCCACTAGTACTGAAAGCATTTCTACTAGGAAAGTATTGCCAATGTCCATTGCTAGACATAATATA
GCAGGAACAACACATTCAGGTGCTGAAAAAGATGTTGATGTTAGTGAAGATTCACCTCCTCCCCTACCTG
AAAGAACTCCTGAATCGTTTGTGTTAGCAAGTGAACATAATACACCTGTAAGATCGGAATGGAGTGAACT
TCAAAGTCAGGAACGATCTGAACAAAAAAAGTCTGAAGGCTTGATAACCTCTGAAAATGAGAAATGTGAT
CATCCAGCGGGAGGTATTCACTATGAAATGTGCATAGAATGTCCACCTACTTTCAGTGACAAGAGAGAAC
AAATATCAGAAAATCCAACAGAAGCCACAGATATTGGTTTTGGTAATCGATGTGGAAAACCCAAAGGACC
AAGAGATCCACCTTCAGAATGGACATGATTCAGGGAGCTAGAAGACACTTTAAGTTATACTGGAAAATTC
AGGTGCCACTGAAAGCCAGATTTATAGTATTCCATCTTTAATATGTGGGACTAACAGCAGTGTAGATTGT
TACCTTAATATTTTTGCTGGGACCATCTACCTGCCTTATACTACACTTAGGAAAAAGTATTACATATGG
TTTATTTTGAAACTTCAAGTATTATTGCCTTAATGTCTCTTAACCCTGTTACACGCTGCTTGTAGACATG
TTAATATAGTAATACCTTTATGATATATTGAGTTTAAGGACTACTCTTTTTCTGTTTTATCATGTATGCA
TTATTTTGTATATGTACAGGGCAAGTAGGTATATAATTTGATAAAGTTGCAATTGAAATATTATTAACAG
AAGATGTAAGAAATTTCTGCATGGTCTAAATCTTTGTGTACTTTATTTGTAAATTATTTGCCCTGGAGTT
TTAGAAAATAGTTTCTGAATTTTAAACTTGCTGGATTCATGCAGCCAGCTTTGCAGGTTATCAGAGATCA
AAGATTGTAATAATAATTTTGTAAATTGTAAGCAAAAAGTTATTTTTATATTATATACAGTCTAATTGTT
CATCCTAATTGTTCCTGTTTTCATCTAGTCAGAGATTCAGTAAGTGCCTTGGAACAATATTGAATTCTCT
TAGCTTGTGTGTGTTTCTTTAATATTTGAACTCAAGTGGGATTAGAAGACTATCAAAATACATGTATGTT
TCAGGATATTTGACCTGTCATTAAAAAAAACAAACAGTTTTACAATAAAAAAAAAAAAAAAAAAAAAAA
AAAAAA

Human PTPN12 mRNA sequence - var6 (public gi: 220033) (SEQ ID NO: 128)
GCCGGGGGGACGCGGGAGGATGGAGCAAGTGGAGATCCTGAGGAAATTCATCCAGAGGGTCCAGGCCATG
AAGAGTCCTGACCACAATGGGGAGGACAACTTCGCCCGGGACTTCATGCGGTTAAGAAGATTGTCTACCA
AATATAGAACAGAAAAGATATATCCCACAGCCACTGGAGAAAAAGAAGAAAATGTTAAAAAGAACAGATA
CAAGGACATACTGCCATTTGATCACAGCCGAGTTAAATTGACATTAAAGACTCCTTCACAAGATTCAGAC
TATATCAATGCAAATTTTATAAAGGGCGTCTATGGGCCAAAAGCATATGTAGCAACTCAAGGACCTTTAG
CAAATACAGTAATAGATTTTTGGAGGATGGTATGGGAGTATAATGTTGTGATCATTGTAATGGCCTGCCG
AGAATTTGAGATGGGAAGGAAAAAATGTGAGCGCTATTGGCCTTTGTATGGAGAAGACCCCATAACGTTT
GCACCATTTAAAATTTCTTGTGAGGATGAACAAGCAAGAACAGACTACTTCATCAGGACACTCTTACTTG
AATTTCAAAATGAATCTCGTAGGCTGTATCAGTTTCATTATGTGAACTGGCCAGACCATGATGTTCCTTC
ATCATTTGATTCTATTCTGGACATGATAAGCTTAATGAGGAAATATCAAGAACATGAAGATGTTCCTATT

Figure 36 part - 71

TGTATTCATTGCAGTGCAGGCTGTGGAAGAACAGGTGCCATTTGTGCCATAGATTATACGTGGAATTTAC
TAAAAGCTGGGAAAATACCAGAGGAATTTAATGTATTTAATTTAATACAAGAAATGAGAACACAAAGGCA
TTCTGCAGTACAAACAAAGGAGCAATATGAACTTGTTCATAGAGCTATTGCCCAACTGTTTGAAAAACAG
CTACAACTATATGAAATTCATGGAGCTCAGAAAATTGCTGATGGAGTGAATGAAATTAACACTGAAAACA
TGGTCAGCTCCATAGAGCCTGAAAAACAAGATTCTCCTCCTCCAAAACCACCAAGGACCCGCAGTTGCCT
TGTTGAAGGGGATGCTAAAGAAGAAATACTGCAGCCACCGGAACCTCATCCAGTGCCACCCATCTTGACA
CCTTCTCCCCCTTCAGCTTTTCCAACAGTCACTACTGTGTGGCAGGACAATGATAGATACCATCCAAAGC
CAGTGTTGCATATGGTTTCATCAGAACAACATTCAGCAGACCTCAACAGAAACTATAGTAAATCAACAGA
ACTTCCAGGGAAAAATGAATCAACAATTGAACAGATAGATAAAAAATTGGAACGAAATTTAAGTTTTGAG
ATTAAGAAGGTCCCTCTCCAAGAGGGACCAAAAAGTTTTGATGGGAACACACTTTTGAATAGGGGACATG
CAATTAAAATTAAATCTGCTTCACCTTGTATAGCTGATAAAATCTCTAAGCCACAGGAATTAAGTTCAGA
TCTAAATGTCGGTGATACTTCCCAGAATTCTTGTGTGGACTGCAGTGTAACACAATCAAACAAAGTTTCA
GTTACTCCACCAGAAGAATCCCAGAATTCAGACACACCTCCAAGGCCAGACCGCTTGCCTCTTGATGAGA
AAGGACATGTAACGTGGTCATTTCATGGACCTGAAAATGCCATACCCATACCTGATTTATCTGAAGGCAA
TTCCTCAGATATCAACTATCAAACTAGGAAAACTGTGAGTTTAACACCAAGTCCTACAACACAAGTTGAA
ACACCTGATCTTGTGGATCATGATAACACTTCACCACTCTTCAGAACACCCCTCAGTTTTACTAATCCAC
TTCACTCTGATGACTCAGACTCAGATGAAAGAAACTCTGATGGTGCTGTGACCCAGAATAAAACTAATAT
TTCAACAGCAAGTGCCACAGTTTCTGCTGCCACTAGTACTGAAAGCATTTCTACTAGGAAAGTATTGCCA
ATGTCCATTGCTAGACATAATATAGCAGGAACAACACATTCAGGTGCTGAAAAAGATGTTGATGTTAGTG
AAGATTCACCTCCTCCCCTACCTGAAAGAACTCCTGAATCGTTTGTGTTAGCAAGTGAACATAATACACC
TGTAAGATCGGAATGGAGTGAACTTCAAAGTCAGGAACGATCTGAACAAAAAAAGTCTGAAGGCTTGATA
ACCTCTGAAAATGAGAAATGTGATCATCCAGCGGGAGGTATTCACTATGAAATGTGCATAGAATGTCCAC
CTACTTTCAGTGACAAGAGAGAACAAATATCAGAAAATCCAACAGAAGCCACAGATATTGGTTTTGGTAA
TCGATGTGGAAAACCCAAAGGACCAAGAGATCCACCTTCAGAATGGACATGATTCAGGGAGCTAGAAGAC
ACTTTAAGTTATACTGGAAAATTCAGGTGCCACTGAAAGCCAGATTTATAGTATTCCATCTTTAATATGT
GGGACTAACAGCAGTGTAGATTGTTACCTTAATATTTTTTGCTGGGACCATCTACCTGCCTTATACTACA
CTTAGGAAAAAGTATTACATATGGTTTATTTTGAAACTTCAAGTATTATTGCCTTAATGTCTCTTAACCC
TGTTACACGCTGCTTGTAGACATGTTAATATAGTAATACCTTTATGATATATTGAGTTTAAGGACTACCC
TTTTTCTGTTTTATCATGTATTCATTATTTTGTATATGTACAGGGCAAGTAGGTATATAATTTGATAAAG
TTGCAATTGAAATATTATTAACAGAAGATGTAAGAAATTTCTGCATGGTCTAAATCTTTGTGTACTTTAT
TTGTAAATTATTTGCCCTGGAGTTTTAGAAAATAGTTTCTGAATTTTAAACTTGCTGGATTCATGCAGCC
AGCTTTGCAGGTTATCAGAGATCAAAGATTGTAATAATAATTTTGTAAATTGTAAGCAAACATTCTGC

Human PTPN12 protein sequence - var1 (public gi: 220034) (SEQ ID NO: 266)

MEQVEILRKFIQRVQAMKSPDHNGEDNFARDFMRLRRLSTKYRTEKIYPTATGEKEENVKKNRYKDILPF
DHSRVKLTLKTPSQDSDYINANFIKGVYGPKAYVATQGPLANTVIDFWRMVWEYNVVIIVMACREFEMGR
KKCERYWPLYGEDPITFAPFKISCEDEQARTDYFIRTLLLEFQNESRRLYQFHYVNWPDHDVPSSFDSIL
DMISLMRKYQEHEDVPICIHCSAGCGRTGAICAIDYTWNLLKAGKIPEEFNVFNLIQEMRTQRHSAVQTK
EQYELVHRAIAQLFEKQLQLYEIHGAQKIADGVNEINTENMVSSIEPEKQDSPPPKPPRTRSCLVEGDAK
EEILQPPEPHPVPPILTPSPPSAFPTVTTVWQDNDRYHPKPVLHMVSSEQHSADLNRNYSKSTELPGKNE
STIEQIDKKLERNLSFEIKKVPLQEGPKSFDGNTLLNRGHAIKIKSASPCIADKISKPQELSSDLNVGDT
SQNSCVDCSVTQSNKVSVTPPEESQNSDTPPRPDRLPLDEKGHVTWSFHGPENAIPIPDLSEGNSSDINY
QTRKTVSLTPSPTTQVETPDLVDHDNTSPLFRTPLSFTNPLHSDDSDSDERNSDGAVTQNKTNISTASAT
VSAATSTESISTRKVLPMSIARHNIAGTTHSGAEKDVDVSEDSPPPLPERTPESFVLASEHNTPVRSEWS
ELQSQERSEQKKSEGLITSENEKCDHPAGGIHYEMCIECPPTFSDKREQISENPTEATDIGFGNRCGKPK
GPRDPPSEWT

Human PTPN12 protein sequence - var2 (public gi: 7689910) (SEQ ID NO: 267)

VKRNRYKDILPFDHSRVKLTLKTPSQDSDYINANFIKGVYGPKAYVATQGPLANTVIDFWRMVWEYNVVI
IVMACREF

Human PTPN12 protein sequence - var3 (public gi: 292409) (SEQ ID NO: 268)

MEQVEILRKFIQRVQAMKSPDHNGEDNFARDFMRLRRLSTKYRTEKIYPTATGEKEENVKKNRYKDILPF
DHSRVKLTLKTPSQDSDYINANFIKGVYGPKAYVATQGPLANTVIDFWRMIWEYNVVIIVMACREFEMGR
KKCERYWPLYGEDPITFAPFKISCEDEQARTDYFIRTLLLEFQNESRRLYQFHYVNWPDHDVPSSFDSIL
DMISLMRKYQEHEDVPICIHCSAGCGRTGAICAIDYTWNLLKAGKIPEEFNVFNLIQEMRTQRHSAVQTK
EQYELVHRAIAQLFEKQLQLYEIHGAQKIADGVNEINTENMISSIEPEKQDSPPPKPPRTRSCLVEGDAK
EEILQPPEPHPVPPILTPSPPSAFPTVTTVWQDNDRYHPKPVLHMVSSEQHSADLNRNYSKSTELPGKNE
STIEQIDKKLERNLSFEIKKVPLQEGPKSFDGNTLLNRGHAIKIKSASPCIADKISKPQELSSDLNVGDT
SQNSCVDCSVTQSNKVSVTPPEESQNSDTPPRPDRLPLDEKGHVTWSFHGPENAIPIPDLSEGNSSDINY
QTRKTVSLTPSPTTQVETPDLVDHDNTSPLFRTPLSFTNPLHSDDSDSDERNSDGAVTQNKTNISTASAT
VSAATSTESISTRKVLPMSIARHNIAGTTHSGAEKDVDVSEDSPPPLPERTPESFVLASEHNTPVRSEWS

Figure 36 part - 72

ELQSQERSEQKKSEGLITSENEKCDHPAGGIHYEMCIECPPTFSDKREQISENPTEATDIGFGNRCGKPK
GPRDPPSEWT

Human PTPN12 pray sequence - var1 (SEQ ID NO: 129)

GTTTGGNATNCTACAGGGNATGTTTAATACCACTACAATGGATGATGTATATAACTATCTATTCGATGAT
GAAGATACCCCACCAAACCCAAAAAAAGAGATCTTTAATACGACTCACTATAGGGCGAGCGCCGCCATGG
AGTACCCATACGACGTACCAGATTACGCTCATATGGCCATGGAGGCCAGTGAATTCCACCCAAGCAGTGG
TATCAACGCAGAGTGGAATTATGGGCGGCGGCGGCGGCGTCTCCGACGGAGGAGGAGGGCGGGGAAGGAG
GATGGAGCAAACAAAGTTTCAGTTACTCCACCAGAAGAATCCCAGAATTCAGACACACCTCCAAGGCCAG
ACCGCTTGCCTCTTGATGAGAAAGGACATGTAACGTGGTCATTTCATGGACCTGAAAATGCCATACCCAT
ACCTGATTTATCTGAAGGCAATTCCTCAGATATCAACTATCAAACTAGGAAAACTGTGAGTTTAACACCA
AGTCCTACAACACAAGTTGAANGCACCTGATCTTGTGGATCATGATAACGCTTCACCACTCTTCAGAACA
CCCCTCANTTTTACTAATCCACTTCACTCTNATGACTCANACTCANATGAAAGAAACTCTGATGGTGCTG
TGACCCANAATAAAACTAATATTTCAACAGCAAGTGCCACAGTTTCTGCTGCCACTANTACTGAAAGCAT
TTCTACTAGGAAAGTATTGCCNATGTCCATTGCTAGACNTANTATANCAGGAACANACATTCAGGTGCTG
AAAAAAANTTNATGTTNNTGAANATTNCCTNCTCCCNNCCTNAANAACTCC

Unigene Name: RALA Unigene ID: Hs.6906 Clone ID: 3GD_1106

Human RALA mRNA sequence - var1 (public gi: 35845) (SEQ ID NO: 130)

ATGGCTGCAAATAAGCCCAAGGGTCAGAATTCTTTGGCTTTACACAAAGTCATCATGGTGGGCAGTGGTG
GCGTGGGCAAGTCAGCTCTGACTCTACAGTTCATGTACGATGAGTTTGTGGAGGACTATGAGCCTACCAA
AGCAGACAGCTATCGGAAGAAGGTAGTGCTAGATGGGGAGGAAGTCCAGATCGATATCTTAGATACAGCT
GGGCAGGAGGACTACGCTGCAATTAGAGACAACTACTTCCGAAGTGGGGAGGGGTTCCTCTGTGTTTTCT
CTATTACAGAAATGGAATCCTTTGCAGCTACAGCTGACTTCAGGGAGCAGATTTTAAGAGTAAAAGAAGA
TGAGAATGTTCCATTTCTACTGGTTGGTAACAAATCAGATTTAGAAGATAAAAGACAGGTTTCTGTAGAA
GAGGCAAAAAACAGAGCTGAGCAGTGGAATGTTAACTACGTGGAAACATCTGCTAAAACACGAGCTAATG
TTGACAAGGTATTTTTTGATTTAATGAGAGAAATTCGAGCGAGAAAGATGGAAGACAGCAAAGAAAAGAA
TGGAAAAAAGAAGAGGAAAAGTTTAGCCAAGAGAATCAGAGAAAGATGCTGCATTTTATAA

Human RALA mRNA sequence - var2 (public gi: 24980846) (SEQ ID NO: 131)

CCGCTCCCCAGAGCAAAGCGTCGGAGTCCTCCTCCTCCTTCTCCTCCTCCTCCTCCTCCTCCAGCCG
CCCAGGCTCCCCCGCCACCCGTCAGACTCCTCCTTCGACCGCTCCCGGCGCGGGGCCTTCCAGGCGACAA
GGACCGAGTACCCTCCGGCCGGAGCCACGCAGCCGCGGCTTCCGGAGCCCTCGGGGCGGCGGACTGGCTC
GCGGTGCAGATTCTTCTTAATCCTTTGGTGAAAACTGAGACACAAAATGGCTGCAAATAAGCCCAAGGGT
CAGAATTCTTTGGCTTTACACAAAGTCATCATGGTGGGCAGTGGTGGCGTGGGCAAGTCAGCTCTGACTC
TACAGTTCATGTACGATGAGTTTGTGGAGGACTATGAGCCTACCAAAGCAGACAGCTATCGGAAGAAGGT
AGTGCTAGATGGGGAGGAAGTCCAGATCGATATCTTAGATACAGCTGGGCAGGAGGACTACGCTGCAATT
AGAGACAACTACTTCCGAAGTGGGGAGGGGTTCCTCTGTGTTTTCTCTATTACAGAAATGGAATCCTTTG
CAGCTACAGCTGACTTCAGGGAGCAGATTTTAAGAGTAAAAGAAGATGAGAATGTTCCATTTCTACTGGT
TGGTAACAAATCAGATTTAGAAGATAAAAGACAGGTTTCTGTAGAAGAGGCAAAAAACAGAGCTGAGCAG
TGGAATGTTAACTACGTGGAAACATCTGCTAAAACACGAGCTAATGTTGACAAGGTATTTTTTGATTTAA
TGAGAGAAATTCGAGCGAGAAAGATGGAAGACAGCAAAGAAAAGAATGGAAAAAAGAAGAGGAAAAGTTT
AGCCAAGAGAATCAGAGAAAGATGCTGCATTTTATAATCAAAGCCCAAACTCCTTTCTTATCTTGACCAT
ACTAATAAATATAATTTATAAGCATTGCCATTGAAGGCTTAATTGACTGAAATTACTTTAACATTTTGGA
AATTGTTGTATATCACTAAAAGCATGAATTGGAACTGCAATGAAAGTCAAATTTACTTTAAAAAGAAATT
AATATGGCTTCACCAAGAAGCAAAGTTCAACTTATTTCATAATTGCCTACATTTATCATGGTCCTGAATG
TAGCGTGTAAGCTTGTGTTTCTTGGGCAGTCTTTCTTGAAATTGAAGAGGTGAAATGGGGGTGGGGAGTG
GGAGGAAAGGTGACTTCCTCTGGTGTTTATTATAAAGCTTAAATTTTATATCATTTTAAAATGTCTTGGT
CTTCTACTGCCTTGAAAAATGACAATTGTGAACATGATAGTTAAACTACCACTTTTTTTAACCATTATTA
TGCAAAATTTAGAAGAAAAGTTATTGGCATGGTTGTTGCATATAGTTAAACTGAGAGTAATTCATCTGTG
AATCTGCTTTAATTACCTGGTGAGTAACTTAGAAAAGTGGTGTAAACTTGTACATGGAATTTTTTGAATA
TGCCTTAATTTAGAAACTGAAAAATATCTGGTTATATCATTCTGGGTGTGTTCTTACTGACACCAGGGGT
CCGCTGCCCCATGTGTCCTGGTGAGAAAATATATGCCTGGCACAGCTTTTGTATAGAAAATTCTTGAGAA
GTAACTGTCCGCTAGAAGTCTGTCCAAATTTAAAATGTGTGCCATATTCTGGTTCTTGAAAATAAGATTC
CAGAGCTCTTTGATCGCTTTTAATAAACTGCAAGTTCATTTTAAATGAAGGGCCAGCATATATACTTGCA
AGATAATTTTCAGCTGCAAGGATTCAGCACCAGTTATGTTTGAATGAACCCTCCTTTTCTCTGAGATTCT
GGTCCCTGGAAATCCCTTTCTGCTAGTGGTGAGCATGTAAGTGTTAAGTTTTTAATCTGGGAGCAGGGCA
TAGGAAGAAAATGTCAGTAGTGCTAATGCATTTTGCACTAGAACGCTTCGGGAAAATATTCATGCTTGCC
ATCTGTTCATTTCTAAATTTATATTCATAAAGTTACAGTTTGATACAGGAATTATTAGGAGTAATTCTTT
TCTGTTTCTGTTTATAATGAAGAACACTGTAGCTACATTTTCAGAAGTTAACATCAAGCCATCAAACCTG
GGTATAGTGCAGAAAACGTGGCACACACTGACCACACATTAGGCTGTGTCACCATTGTGTGGTGTACCTG

Figure 36 part - 73

CTGGAAGAATTCTAGCATGCTACTTGGGGACATAATTTCAGTGGGAAATATGCCACTGACCGATTTTTTT
TTTTTCCTCTTTGCAGTGGGGCTAGGACAGTTGATTCAACAAAGTATTTTTTTCTTTTTTCTCAGTCCTA
ATTTGAACAGGTCAAAGATGTGTTCAGGCATTCCAGGTAACAGGTGTGTATGTAAAGTTAAAAATAGGCT
TTTTAGGAACTCACTCTTTAGATATTTACATCCAGCTTCTCATGTTAAATATTTGTCCTTAAAGGGTTTG
AGATGTACATCTTTCATTTCGTATTTCTCATAGGCTATGCCATGTGCGGAATTCAAGTTACCAATGTAAC
ACTGGCCAGCGGGCCCAGCAATCTCCATGTGTACTTATTACAGTCTTATTTAACCAGGGGTCCTAACCAC
TAACATTGTGACTTTGCTTTGAGACCTTTCCTCTCCTGGGTACTGAGGTGCTATGAAGCCAACTGACAAA
GATGCATCACGTGTCTTAGGCTGATGCCACTACCCGATTTGTTTATTTGCAATTTGAGCCATTTAAAGAC
CAATAAACTTCCTTTTTTAAAAAAAAAAAAAAAAAAAAAAAAAA

Human RALA mRNA sequence - var3 (public gi: 3483427) (SEQ ID NO: 132)
ATAATCAAAGCCCAAACTCCTTTCTTATCTTGACCATACTAATAAATATAATTTATAAGCATTGCCATTG
AAGGCTTAATTGACTGAAATTACTTTAACATTTTGGAAATTGTTGTATATCACTAAAAGCATGAATTGGA
ACTGCAATGAAAGTCAAATTTACTTTAAAAAGAAATTAATATGGCTTCACCAAGAAGCAAAGTTCAACTT
ATTTCATAATTGCCTACATTTATCATGGTCCTGAATGTAGCGTGTAAGCTTGTGTTTCTTGGGCAGTCTT
TCTTGAAATTGAAGAGGTGAAATGGGGGTGGGGAGTGGGAGGAAAGGTGACTTCCTCTGGTGTTTATTAT
AAAGCTTAAATTTTATATCATTTTAAAATGTCTTGGTCTTCTACTGCCTTGAAAAATGACAATTGTGAAC
ATGATAGTTAAACTACCACTTTTTTTAACCATTATTATGCAAAAAAAAAA

Human RALA mRNA sequence - var4 (public gi: 20147712) (SEQ ID NO: 133)
ATGGTCGACTACCTAGCAAATAAGCCCAAGGGTCAGAATTCTTTGGCTTTACACAAAGTCATCATGGTGG
GCAGTGGTGGCGTGGGCAAGTCAGCTCTGACTCTACAGTTCATGTACGATGAGTTTGTGGAGGACTATGA
GCCTACCAAAGCAGACAGCTATCGGAAGAAGGTAGTGCTAGATGGGGAGGAAGTCCAGATCGATATCTTA
GATACAGCTGGGCAGGAGGACTACGCTGCAATTAGAGACAACTACTTCCGAAGTGGGGAGGGGTTCCTCT
GTGTTTTCTCTATTACAGAAATGGAATCCTTTGCAGCTACAGCTGACTTCAGGGAGCAGATTTTAAGAGT
AAAAGAAGATGAGAATGTTCCATTTCTACTGGTTGGTAACAAATCAGATTTAGAAGATAAAAGACAGGTT
TCTGTAGAAGAGGCAAAAAACAGAGCTGAGCAGTGGAATGTTAACTACGTGGAAACATCTGCTAAAACAC
GAGCTAATGTTGACAAGGTATTTTTTGATTTAATGAGAGAAATTCGAGCGAGAAAGATGGAAGACAGCAA
AGAAAAGAATGGAAAAAAGAAGAGGAAAAGTTTAGCCAAGAGAATCAGAGAAAGATGCTGCATTTTATAA

Human RALA mRNA sequence - var5 (public gi: 10439805) (SEQ ID NO: 134)
AGAATGGAAAAAAGAAGAGGAAAAGTTTAGCCAAGAGAATCAGAGAAAGATGCTGCATTTTATAATCAAA
GCCCAAACTCCTTTCTTATCTTGACCATACTAATAAATATAATTTATAAGCATTGCCATTGAAGGCTTAA
TTGACTGAAATTACTTTAACATTTTGGAAATTGTTGTATATCACTAAAAGCATGAATTGGAACTGCAATG
AAAGTCAAATTTACTTTAAAAAGAAATTAATATGGCTTCACCAAGAAGCAAAGTTCAACTTATTTCATAA
TTGCCTACATTTATCATGGTCCTGAATGTAGCGTGTAAGCTTGTGTTTCTTGGGCAGTCTTTCTTGAAAT
TGAAGAGGTGAAATGGGGGTGGGGAGTGGGAGGAAAGGTGACTTCCTCTGGTGTTTATTATAAAGCTTAA
ATTTTATATCATTTTAAAATGTCTTGGTCTTCTACTGCCTTGAAAAATGACAATTGTGAACATGATAGTT
AAACTACCACTTTTTTTAACCATTATTATGCAAAATTTAGAAGAAAAGTTATTGGCATGGTTGTTGCATA
TAGTTAAACTGAGAGTAATTCATCTGTGAATCTGCTTTAATTACCTGGTGAGTAACTTAGAAAAGTGGTG
TAAACTTGTACATGGAATTTTTTGAATATGCCTTAATTTAGAAACTGAAAAATATCCGGTTATATCATTC
TGGGTGTGTTCTTACTGACACCAGGGGTCCGCTGCCCCATGTGTCCTGGTGAGAAAATATATGCCTGGCA
CAGCTTTTGTATAGAAAATTCTTGAGAAGTAACTGTCCGCTAGAAGTCTGTCCAAATTTAAAATGTGTGC
CATATTCTGGTTCTTGAAAATAAGATTCCAGAGCTCTTTGATCGCTTTTAATAAACTGCAAGTTCATTTT
AATTGAAGGGCCAGCATATATACTTGCAAGATAATTTTCAGCTGCAAGGATTCAGCACCAGTTATGTTTG
AATGAACCCTCCTTTTCTCTGAGATTCTGGTCCCTGGAAATCCCTTTCTGCTAGTGGTGAGCATGTAAGT
GTTAAGTTTTTAATCTGGGAGCAGGGCATAGGAAGAAAATGTCAGTAGTGCTAATGCATTTTGCACTAGA
ACGCTTCGGGAAAATATTCATGCTTGCCATCTGTTCATTTCTAAATTTATATTCATAAAGTTACAGTTTG
ATACAGGAATTATTAGGAGTAATTCTTTTCTGTTTCTGTTTATAATGAAGAACACTGTAGCTACATTTTC
AGAAGTTAACATCAAGCCATCAAACCTGGGTATAGTGCAGAAGACGTGGCACACACTGACCACACATTAG
GCTGTGTCACCATTGTGTGGTGTACCTGCTGGAAGAATTCTAGCATGCTACTTGGGGACATAATTTCAGT
GGGAAATATGCCACTGACCGATTTTTTTTTTTTCCTCTTTGCAGTGGGGCTAGGACAGTTGATTCAACA
AAGTATTTTTTTCTTTTTTCTCAGTCCTAATTTGGACAGGTCAAAGATGTGTTCAGGCATTCCAGGTAAC
AGGTGTGTATGTAAAGTTAAAAATAGGCTTTTTAGGAACTCACTCTTTAGATATTTACATCCAGCTTCTC
ATGTTAAATATTTGTCCTTAAAGGGTTTGAGATGTACATCTTTCATTTCGTATTTCTCATAGGCTATGCC
ATGTGCGGAATTCAAGTTACCAATGTAACACTGGCCAGCGGGCCCAGCAATCTCCATGTGTACTTATTAC
AGTCTTATTTAACCAGGGGTCCTAACCACTAACATTGTGACTTTGCTTTGAGACCTTTCCTCTCCTGGGT
ACTGAGGTGCTATGAAGCCAACTGACAAAGATGCATCACGTGTCTTAGGCTGATGCCACTACCCGATTTG
TTTATTTGCAATTTGAGCCATTTAAAGACCAATAAACTTCCTTTTTTTAAAAAAAAAAAAAAAAAAAAAA
AAAAA

Human RALA Protein sequence - var1 (public gi: 35846) (SEQ ID NO: 269)

Figure 36 part - 74

MAANKPKGQNSLALHKVIMVGSGGVGKSALTLQFMYDEFVEDYEPTKADSYRKKVVLDGEEVQIDILDTA
GQEDYAAIRDNYFRSGEGFLCVFSITEMESFAATADFREQILRVKEDENVPFLLVGNKSDLEDKRQVSVE
EAKNRAEQWNVNYVETSAKTRANVDKVFFDLMREIRARKMEDSKEKNGKKKRKSLAKRIRERCCIL

Human RALA Protein sequence - var2 (public gi: 20147713) (SEQ ID NO: 270)
MVDYLANKPKGQNSLALHKVIMVGSGGVGKSALTLQFMYDEFVEDYEPTKADSYRKKVVLDGEEVQIDIL
DTAGQEDYAAIRDNYFRSGEGFLCVFSITEMESFAATADFREQILRVKEDENVPFLLVGNKSDLEDKRQV
SVEEAKNRAEQWNVNYVETSAKTRANVDKVFFDLMREIRARKMEDSKEKNGKKKRKSLAKRIRERCCIL

Figure 36 part - 75

Unigene Name: SIAH1 Unigene ID: Hs.295923 Clone ID: 3GD_150

Human SIAH1 mRNA sequence - var1 (public gi: 27503513) (SEQ ID NO: 135)

CCAGCGCGTCGCCCCCTGCATCCGTGGCCTCCACTGGAGCTGGGCAGGACCCTACCCAGTGAATCTGGAG
AAAACAAACTTGGGAGACAGACGAAAGCTTAGGGCACATTGGAGGACAGCGCAGCTGTGGCTCCCATTTT
TGGAGATGCAGTCGAATTTGAGCTCACAGGGAGGTGTGGTTGCCTCCTGGGGATGGAAAGGCTTCCTTTC
TCCACCTCTGTAACTGGTGCTTCTGAGAAGTAAATGGTATTTGGATCCTGACCTCAGACGTGAATTTGGG
TCTTCTGTGCTTAGGAGCAGAAAGAGCCCAGGAGGGGCCTGTTCCTTTACTTCTTGGGGGAAACGCAATG
CGTGGCCTGACTTCTCATGACGGGAAAGGCTACTCCACCTTCTCTGTACTCCTGGAGGGGAGTCTTGTTC
ACATGTTTACCAGCGGCCAGGACAAGGAAGAGAAAAGAAATGAGCCGTCAGACTGCTACAGCATTACCTA
CCGGTACCTCGAAGTGTCCACCATCCCAGAGGGTGCCTGCCCTGACTGGCACAACTGCATCCAACAATGA
CTTGGCGAGTCTTTTTGAGTGTCCAGTCTGCTTTGACTATGTGTTACCGCCCATTCTTCAATGTCAGAGT
GGCCATCTTGTTTGTAGCAACTGTCGCCCAAAGCTCACATGTTGTCCAACTTGCCGGGGCCCTTTGGGAT
CCATTCGCAACTTGGCTATGGAGAAAGTGGCTAATTCAGTACTTTTCCCCTGTAAATATGCGTCTTCTGG
ATGTGAAATAACTCTGCCACACACAGAAAAAGCAGACCATGAAGAGCTCTGTGAGTTTAGGCCTTATTCC
TGTCCGTGCCCTGGTGCTTCCTGTAAATGGCAAGGCTCTCTGGATGCTGTAATGCCCCATCTGATGCATC
AGCATAAGTCCATTACAACCCTACAGGGAGAGGATATAGTTTTTCTTGCTACAGACATTAATCTTCCTGG
TGCTGTTGACTGGGTGATGATGCAGTCCTGTTTTGGCTTTCACTTCATGTTAGTCTTAGAGAAACAGGAA
AAATACGATGGTCACCAGCAGTTCTTCGCAATCGTACAGCTGATAGGAACACGCAAGCAAGCTGAAAATT
TTGCTTACCGACTTGAGCTAAATGGTCATAGGCGACGATTGACTTGGGAAGCGACTCCTCGATCTATTCA
TGAAGGAATTGCAACAGCCATTATGAATAGCGACTGTCTAGTCTTTGACACCAGCATTGCACAGCTTTTT
GCAGAAAATGGCAATTTAGGCATCAATGTAACTATTTCCATGTGTTGAAATGGCAATCAAACATTTTCTG
GCCAGTGTTTAAAACTTCAGTTTCACAGAAAATAAGGCACCCATCTGTCTGCCAACCTAAAACTCTTTCG
GTAGGTGGAAGCTAGACACATGAAGGTAAATAAAAAGAAAGGCTGTTAAATACAGGAAACAGTTGCATGT
AGTAACACTAATATATTTAAAAATAAGTCAACAGTAAACCACTGAAAAAATATATGTATATACACCCAAG
ATGGGCATCTTTTGTATTAAGAAAGGAAGCATTGTAAAATAATTCTGAGTTTTGTGTTTGTTGTAGATTG
ATTGTATTGTTGAAAAAGTTTGTTTTTGCGTGGGAGTGTGTGCCTGCGTGGGTGTGTGCGTGTTTGGGTT
TTTTTCCTTTAACTGACAAGCCATCTTGAGTGGTCATGGGCCACTGCTTTTCCCTTTGTGAGTCAATACA
TAGTGCTGCTGTGTGCTTTTTTTGTGTGTATTTGCTAATTTTTATTAATTTTAGTTTTTCATTAAATAAA
TTTGACTTTTCTGTAATTCAGGTTTTTCCTTTTTTTGTACCATTTTAAAGTTAGTATCTTTTGATATGCA
TATTTGTTTATGGTAAAAAATTTATAACGTGTTCAATATTTTCTTTTCCCCCATTAATCAGTTCATTAGA
AATATTTTAAAATCAGCTATTTTGTGAAGCCATGAGTTCCAGAAAGTAAAGGTGACATCGGAAAAATAAT
CAAAAGCTATTTAAAGCATCTATAAGGTGCTCTCTTTCTGTCTTCTACAGATGAGTCACACCTTTGAGCT
TAATCTTTGAAAGGTTAGAGAATAAATTGATTTTTATAAATACTGCAAATCAGGCTTTTGTTTCCTTTTT
CAGATATCTTGGACAAATCACATATTTTAAAATTTGTTCTTGTATTTATTGGTTTTGCAGAAGAAGGCAT
CGTCATGCACAGTATTTGTAATTAAAAGCAAATCATTTGTTTAAAAAGGCAGTTTGCAAAAAATGTTTTT
GGTCTTTTATAATTCTCATTAAAAGAATATCTGTCAAATTAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAA

Human SIAH1 mRNA sequence - var2 (public gi: 4506946) (SEQ ID NO: 136)

GCGGCGGCCAGGGGGGAGCCGGGGCGGCCGTTGCGGGGCGCGCTCTCGAGAGGCGGCGGCGGCCAGGGTG
TCCCGTCGGTCTCGGCGCCGGGAAGAGGCGGTGGCGCTGCCCGCGGTGGCGGGGGTTGGCGACGGAGCGC
GTTGGTGCCAGGACCGGGGTCCGAGGCGCGCTCTCCGCCCACAGAAATGAGCCGTCAGACTGCTACAGCA
TTACCTACCGGTACCTCGAAGTGTCCACCATCCCAGAGGGTGCCTGCCCTGACTGGCACAACTGCATCCA
ACAATGACTTGGCGAGTCTTTTTGAGTGTCCAGTCTGCTTTGACTATGTGTTACCGCCCATTCTTCAATG
TCAGAGTGGCCATCTTGTTTGTAGCAACTGTCGCCCAAAGCTCACATGTTGTCCAACTTGCCGGGGCCCT
TTGGGATCCATTCGCAACTTGGCTATGGAGAAAGTGGCTAATTCAGTACTTTTCCCCTGTAAATATGCGT
CTTCTGGATGTGAAATAACTCTGCCACACACAGAAAAAGCAGACCATGAAGAGCTCTGTGAGTTTAGGCC
TTATTCCTGTCCGTGCCCTGGTGCTTCCTGTAAATGGCAAGGCTCTCTGGATGCTGTAATGCCCCATCTG
ATGCATCAGCATAAGTCCATTACAACCCTACAGGGAGAGGATATAGTTTTTCTTGCTACAGACATTAATC
TTCCTGGTGCTGTTGACTGGGTGATGATGCAGTCCTGTTTTGGCTTTCACTTCATGTTAGTCTTAGAGAA
ACAGGAAAAATACGATGGTCACCAGCAGTTCTTCGCAATCGTACAGCTGATAGGAACACGCAAGCAAGCT
GAAAATTTTGCTTACCGACTTGAGCTAAATGGTCATAGGCGACGATTGACTTGGGAAGCGACTCCTCGAT
CTATTCATGAAGGAATTGCAACAGCCATTATGAATAGCGACTGTCTAGTCTTTGACACCAGCATTGCACA
GCTTTTTGCAGAAAATGGCAATTTAGGCATCAATGTAACTATTTCCATGTGTTGAAATGGCAATCAAACA
TTTTCTGGCCAGTGTTTAAAACTTCAGTTTCACAGAAAATAAGGCACCCATCTGTCTGCCAACCTAAAAC
TCTTTCGGTAGGTGGAAGCTAGACACATGAAGGTAAATAAAAAGAAAGGCTGTTAAATACAGGAAACAGT
TGCATGTAGTAACACTAATATATTTAAAAATAAGTCAACAGTAAACCACTGAAAAAATATATGTATATAC
ACCCAAGATGGGCATCTTTTGTATTAAGAAAGGAAGCATTGTAAAATAATTCTGAGTTTTGTGTTTGTTG
TAGATTGATTGTATTGTTGAAAAAGTTTGTTTTTGCCGTGGGAGTGTGTGCCTGCGTGGGTGTGTGCGTG
TTGGTTTTTCCTTAACTGACAAGCCATCTTGAGTGGTCATGGGCCACTGCTTTTCCCTTTGTGAGTCAAT

Figure 36 part - 76

ACATAGTGCTGCTGTGTGCTTTTTTTGTGTGTATTTGCTAATTTTTATTAATTTTAGTTTTTCATTAAAT
AAATTTGACTTTTCTGTAATTCAGGTTTTTCCTTTTTTTGTACCATTTTAAAGTTAGTATCTTTTGATAT
GCATATTTGTTTATGGTAAAAAATTTATAACGTGTTCAATATTTTCTTTTCCCCCATTAATCAGTTCATT
AGAAATATTTTAAAATCAGCTATTTTGTGAAGCCATGAGTTCCAGAAAGTAAAGGTGACATCGGAAAAAT
AATCCCAAGCTATTTAAAGCATCTATAAGGTGCTCTCTTTCTGTCTTCTACAGATGAGTCACACCTTTGA
GCTTAATCTTGAAGGTTAGAGATAAATTGATTTTTATAAATACTGCAAATCAGGCTTTTGTTTCCTTTTT
CAGATATCTTGGACAAATCACATATTTTAAAATTTGTTCTTGTATTTATTGGTTTTGCAGAAGAAGGCAT
CGTCATGCACAGTATTTGTAATTAAAAGCAAATCATTTGTTTAAAAAGGCAGTTTGCAAAAAATGTTTTT
GGTCTTTTATAATTCTCA

Human SIAH1 mRNA sequence - var3 (public gi: 16551141) (SEQ ID NO: 137)

TTTATAATAGCCCTCCAAATGGGTGTGACGTATTTTGATTCTATGTCCCTAATGACTAGTGATGTTGAGC
ATTTTCTAGCATTGATTTTTAAGATGTTACCCAAAGACCCCTTGTATCAAAATAAGCTGGATTTTTTTAT
TGAAAATTATTAACTCTAGAAATTTTAGTTTAAACTAGACTTAGGGATATGTGTATTTTACTGGTATTCC
ACGTTTTATGCATGGGTTTTTAAAACTTCTCAAGTATTAAAACTAAAAGCTTTAGGTGCTTTGCTTATCA
AGAAATCCTACACTGTCCACTGGAGACATCCATGTTTTTACTTGGCTCTGCCCCTTTAGTGGTCCCTGTG
AACCTTACCTCAAACCATGCATCTGGGGCAGAGATCCTTACTTGCTTGGTGGTTACAAATGCAAATACAG
TGAAGAATGTCATCTTTGTGATTGTTCCTGAAATAGTTCACGAGAAATCCATGACCGTAAAGTACTGTGA
TAGTGATGTCTACCACTGTGAGCTTCCAGTACTAGGTGATTGGTCTGCATTCACAGTGACCAAAATCAGC
TATGTGGCCAGGTAATTCACTGCTGAGGGCTTTGGATTTTCCTTTATGAACTACTGAAATGAGGTCAACT
TGACTATTACTAAGGGACATTTTGCTACAAAGAATGTTAGTTTTGCCAATTCCCTTTCCAAATCTAAAAT
TTATTTTAACCAGGATTTTAGATGTAAACATCAAGTAGTTTTGGTTGTTTCAATGAAGTAACATGTTTAA
GCTCACATTATTTGAAGTACTTCAGTTCCTATTGCCATGAAAATTGTATCCAGCAGCTAAAAAAAAAAAA
AAAAAAAAGACTACAGTTAGTCATTATCCAATTTGATGATTTATGGTCCAACACTAATGCTCATTTTTTT
TGTTTTTTTTACAAACATTTGGTGGATACCACAATGAAAACTGCACTTAAAAAACAAAAATGCTGAAAGA
GGAAGGAAATATCAAAAAGGTCTGAATAGACAACAGGCAAATATGCTTCCACCTACCGAAAGAGTTTTAG
GTTGGCAGACAGATGGGTGCCTTATTTTCTGTGAAACTGAAGTTTTAAACACTGGCCAGAAAATGTTTGA
TTGCCATTTCAACACATGGAAATAGTTACATTGATGCCTAAATTGCCATTTTCTGCAAAAAGCTGTGCAA
TGCTGGTGTCAAAGACTAGACAGTCGCTATTCATAATGGCTGTTGCAATTCCTTCATGAATAGATCGAGG
AGTCGCTTCCCAAGTCAATCGTCGCCTATGACCATTTAGCTCAAGTCGGTAAGCAAAATTTTCAGCTTGC
TTGCGTGTTCCTATCAGCTGTACGATTGCGAAGAACTGCTGGTGACCATCGTATTTTTCCTGTTTCTCTA
AGACTAACATGAAGTGAAAGCCAAAACAGGACTGCATCATCACCCAGTCAACAGCACCAGGAAGATTAAT
GTCTGTAGCAAGAAAAACTATATCCTCTCCCTGTAGGGTTGTAATGGACTTATGCTGATGCATCAGATGG
GGCATTACAGCATCCAGAGAGCCTTGCCATTTACAGGAAGCACCAGGGCACGGACAGGAATAAGGCCTAA
ACTCACAGAGCTCTTCATGGTCTGCTTTTTCTGTGTGTGGCAGAGTTATTTCACATCCAGAAGACGCATA
TTTACAGGGGAAAAGTACTGAATTAGCCACTTTCTCCATAGCCAAGTTGCGAATGGATCCCAAAGGGCCC
CGGCAAGTTGGACAACATGTGAGCTTTGGGCGACAGTTGCTACAAACAAGATGGCCACTCTGACATTGAA
GAATGGGCGGTAACACATAGTCAAAGCAGACTGGACACTCAAAAAGACTCGCCAAGTCATTGTTGGATGC
AGTTGTGCCAGTCAGGGCAGGCACCCTCTGGGATGGTGGACACTTCGAGGTACCGGTAGGTAATGCTGTA
GCAGTCTGACGGCTCATTTCTGAAATAAATACATAAGGAGGCAGGAGAAAAATAATTATAACCATGACTT
ACTTTATAAATAATGTTTACATGCCATAAGTCCTTTTAAAGTTTCATACAAAATTTACTGAGCAAAAGAG
GAAGAAAAATAGGATTAAAAAAGATATT

Human SIAH1 mRNA sequence - var4 (public gi: 21753769) (SEQ ID NO: 138)

TTTCACCCCCAAGACAAATAGTGGCCTGCCATTTTCCAGCCCAGGTAGCTTCCTGGGAAAAGTTGCTTGT
TTTATCTTTGACTCAGCCTGGCTAGTTACATTGTCGATTATTTCTTCCAGATGATATTTACCTGTTAAAT
AATGTTTATTACTCTGCTGATGAATGTTTTCAGCAACGCTGGAGAACCCTAGGCTGCAAGGGGTTCTTCA
CCTGTTGACTCCATCCCCCACCCCCAGTATGGCATATATCTCTGCCGTGCTATCATCTTTATTCTTTCCT
TTTTCATTGTCTCTTCCTGACTGTCCTCCTTTGTTCATTATGTCTGACACATATTGTGGATTGAAAGTAG
AACAGAAAGATATACTTTCTCTACCAGACTAAAAAGTTTTGAGATGGCCCTCCATTTCTCCCATGCCTCA
CTTCACCTTAGTTGTGTTTTTATTTATTTTTATATTTTCGCCACCTTCACTAGCGAGTACATCCCCTCAC
TCTTGAGGTGGGCACTGATCAGTAGGAAATAAGATTAATACCTGGCTGGTGATAATTTGGGGGGAAGACT
TAATTAGATAGAGATGGATAATGGGATGGCAGCAGACCTTTCCCCTTGTGACCCTTCCCCTCATTTCCAA
AATACACCTCTAGAGTAGATAATTGCTTACCATTAAGAAGAGTTAATGGAAGGTGATACTCTGATTCTTT
GGCATTGGAACTACATTCAATCCGCGGTATCCTCGGATTAGTTCTAGGACCCCCTTCTCCATACCAAAAC
CTGAGGATGCTCAAGTCCCTGATAGAAAATGGTGTCATATTTGTATGTGCATATTCTCTTGTATAATTTA
AGTGATCTCTGGATTACTTAATACAATGTAAACAATATGTAAATAGTTGTTATAGACTGTATTTTAAAAA
TTTTGTATTCTTTATAAATTTTTCTGAATATTTTCAATCCATGGCTGGTGAAGTCCTCGGATGCAGACCG
TGTGGATACAGAGTGCCGATTTTATACAGGAGTTCACCTGTAACTCCCTGTACCTATCAACAGCTGACTC
CAAATTAGAAAGAAATAGAGTAAGGGAGCCTCAGGGAGAGTCCTAGCAAAACGGATTCGATTAAACTTCA
GTTCCTTGTATAGTTTCTTTAGTTGTTTATGGTCCATTTTCTATTTTAGCATTTATTATTCTATGTAGTC
TATCCAAAGACGATTAAGGGAGTTCCACATGTTTTCCGGAACATTTTGAAAAGAGAGCTTATCCAGTGTA

Figure 36 part - 77

CAGATCCTAATAAAGTGCACATTCAGTGTAATTTTATTTTTTTAATATCTTTTTTAATCCTATTTTTCTT
CCTCTTTTGCTCAGTAAATTTTGTATGAAACTTTAAAAGGACTTATGGCATGTAAACATTATTTATAAAG
TAAGTCATGGTTATAATTATTTTTCTCCTGCCTCCTTATGTATTTATTTCAGAAATGAGCCGTCAGACTG
CTACAGCATTACCTACCGGTACCTCGAAGTGTCCACCATCCCAGAGGGTGCCTGCCCTGACTGGCACAAC
TGCATCCAACAATGACTTGGCGAGTCTTTTTGAGTGTCCAGTCTGCTTTGACTATGTGTTACCGCCCATT
CTTCAATGTCAGAGTGGCCATCTTGTTTGTAGCAACTGTCGCCCAAAGCTCACATGTTGTCCAACTTGCC
GGGGCCCTTTGGGATCCATTCGCAACTTGGCTATGGAGAAAGTGGCTAATTCAGTACTTTTCCCCTGTAA
ATATGCGTCTTCTGGATGTGAAATAACTCTGCCACACACAGAAAAAGCAGACCATGAAGAGCTCTGTGAG
TTTAGGCCTTATTCCTGTCCGTGCCCTGGTGCTTCCTGTAAATGGCAAGGCTCTCTGGATGCTGTAATGC
CCCATCTGATGCATCAGCATAAGTCCATTACAACCCTACAGGGAGAGGATATAGTTTTTCTTGCTACAGA
CATTAATCTTCCTGGTGCTGTTGACTGGGTGATGATGCAGTCCTGTTTTGGCTTTCACTTCATGTTAGTC
TTAGAGAAACAGGAAAAATACGATGGTCACCAGCAGTTCTTCGCAATCGTACAGCTGATAGGAACACGCA
AGCAAGCTGAAAATTTTGCTTACCGACTTGAGCTAAATGGTCATAGGCGACGATTGACTTGGGAAGCGAC
TCCTCGATCTATTCATGAAGGAATTGCAACAGCCATTATGAATAGCGACTGTCTAGTCTTTGCCACCAGC
ATTGCACAGCTTTTTGCAGAAAATGGCAATTTAGGCATCAATGTAACTATTTCCATGTGTTGAAATGGCA
ATCAAACATTTTCTGGCCAGTGTTTAAAACTTCAGTTTCACAGAAAATAAGGCACCCATCTGTCTGCCAA
CCTAAAACTCTTTCGGTAGGTGGAAGCTAGACACATGAAGGTAAATAAAAAGAAAGGCTGTTAAATACAG
GAAACAGTTGCATGTAGTAACACTAATATATTTAAAAATAAGTCAACAGTAAACCACTGAAAAAATATAT
GTATATACACCCAAGATGGGCATCTTTTGTATTAAGAAAGGAAGCATTGTAAAATAATTCTGAGTTTTGT
GTTTGTTGTAGATTGATTGTATTGTTGAAAAAGTTTGTTTTTGCGTGGGAGTGTGTGCCTGCGTGGGTGT
GTGCGTGTTTGGGTTTTTTTCCTTTAACTGACAAGCCATCTTGAGTGGTCATGGGCCACTGCTTTTCCCT
TTGTGAGTCAATACATAGTGCTGCTGTGTGCTTTTTTTGTGTGTATTTGCTAATTTTTATTAATTTTAGT
TTTTCATTAAATAAATTTGACTTTTCTGT

Human SIAH1 mRNA sequence - var5 (public gi: 3041824) (SEQ ID NO: 139)

ATGAGCCGTCAGACTGCTACAGCATTACCTACCGGTACCTCGAAGTGTCCACCATCCCAGAGGGTGCCTG
CCCTGACTGGCACAACTGCATCCAACAATGACTTGGCGAGTCTTTTTGAGTGTCCAGTCTGCTTTGACTA
TGTGTTACCGCCCATTCTTCAATGTCAGAGTGGCCATCTTGTTTGTAGCAACTGTCGCCCAAAGCTCACA
TGTTGTCCAACTTGCCGGGGCCCTTTGGGATCCATTCGCAACTTGGCTATGGAGAAAGTGGCTAATTCAG
TACTTTTCCCCTGTAAATATGCGTCTTCTGGATGTGAAATAACTCTGCCACACACAGAAAAAGCAGACCA
TGAAGAGCTCTGTGAGTTTAGGCCTTATTCCTGTCCGTGCCCTGGTGCTTCCTGTAAATGGCAAGGCTCT
CTGGATGCTGTAATGCCCCATCTGATGCATCAGCATAAGTCCATTACAACCCTACAGGGAGAGGATATAG
TTTTTCTTGCTACAGACATTAATCTTCCTGGTGCTGTTGACTGGGTGATGATGCAGTCCTGTTTTGGCTT
TCACTTCATGTTAGTCTTAGAGAAACAGGAAAAATACGATGGTCACCAGCAGTTCTTCGCAATCGTACAG
CTGATAGGAACACGCAAGCAAGCTGAAAATTTTGCTTACCGACTTGAGCTAAATGGTCATAGGCGACGAT
TGACTTGGGAAGCGACTCCTCGATCTATTCATGAAGGAATTGCAACAGCCATTATGAATAGCGACTGTCT
AGTCTTTGACACCAGCATTGCACAGCTTTTTGCAGAAAATGGCAATTTAGGCATCAATGTAACTATTTCC
ATGTGTTGAAATGGCAATCAAACATTTTCTGGCCAGTGTTTAAAACTTCAGTTTCACAGAAAATAAGGCA
CCCATCTGTCTGCCAACCTAAAACTCTTTCGGTAGGTAGAAGCTAGACACATGAAGGTAAATAAAAAGAA
AGGCTGTTAAATACAGGAAACAGTTCCATGTAGTAACACTAATATATTTAAAAATAAGTCAACAGTAAAC
CACTGAAAAAATATATGTATATACACCCAAGATGGGCATCTTTTGTATTAAGAAAGGAAGCATTGTAAAA
TAATTCTGAGTTTTGTGTTTGTTGTAGATTGATTGTATTGTTGAAAAAGTTTGTTTTTGCGTGGGAGTGT
GTGCCTGCGTGGGTGTGTGCGTGTTTGGGTTTTTTTCCTTTAACTGACAAGCCATCTTGAGTGGTCATGG
GCCACTGCTTTTCCCTTTGTGAGTCAATACATAGTGCTGCTGTAAGCCGTTTTTGTGTGTATTTGCTAAT
TTTTATTAATTTTAGTTTTTCATTAAATAAATTTGACTTTTCTGTAATTCAGGTTTTTCCTTTTTTTGTA
CCATTTTAAAGTTAGTATCTTTTGATATGGCATATTTGTTTATGGTAAAAAATTTATAACGGGTTCAATA
TTTTCTTTTCCCCCATTAATCAAGTCCATTGGAAATATTTTAAAACCAGCCTATTTTGGTGAACCCATGA
GTTCCCAGAAAGTAAAGGTGACACCCGGAAAAATAATCCAAAAGCCTATTTAAAGCCACCTATAAGGTGC
CCCCCTTTCCTGTCTTCCTACAGATGAGTCACACCTTTGAGCCTTAACCTTTGAAAGGTTAGAGAATAAA
TTGATTTTTATAAATACTGCAAATCCAGGCTTTTGTTTCCTTTTTCCAGATATCCTTGGACAAATCACAT
ATTTTAAAATTTGTTCTTGTATTTATTGGTTTTGCAGAAGAAGGCATCGTCATGCACAGTATTTGTAATT
AAAAGCAAATTCATTTGTTTAAAAAGGCAGTTTGCAAAAAATGTTTTTGGTCTTTTATAATTCTCA

Human SIAH1 mRNA sequence - var6 (public gi: 17390431) (SEQ ID NO: 140)

CGGCGCCGGGAAGAGGCGGTGGCGCTGCCCGCGGTGGCGGGGGTTGGCGACGGAGCGCGTTGGTGCCAGG
ACCGGGGTCCGAGGCGCGCTCTCCGCCCACAGAAATGAGCCGTCAGACTGCTACAGCATTACCTACCGGT
ACCTCGAAGTGTCCACCATCCCAGAGGGTGCCTGCCCTGACTGGCACAACTGCATCCAACAATGACTTGG
CGAGTCTTTTTGAGTGTCCAGTCTGCTTTGACTATGTGTTACCGCCCATTCTTCAATGTCAGAGTGGCCA
TCTTGTTTGTAGCAACTGTCGCCCAAAGCTCACATGTTGTCCAACTTGCCGGGGCCCTTTGGGATCCATT
CGCAACTTGGCTATGGAGAAAGTGGCTAATTCAGTACTTTTCCCCTGTAAATATGCGTCTTCTGGATGTG
AAATAACTCTGCCACACACAGAAAAAGCAGACCATGAAGAGCTCTGTGAGTTTAGGCCTTATTCCTGTCC
GTGCCCTGGTGCTTCCTGTAAATGGCAAGGCTCTCTGGATGCTGTAATGCCCCATCTGATGCATCAGCAT

Figure 36 part - 78

AAGTCCATTACAACCCTACAGGGAGAGGATATAGTTTTTCTTGCTACAGACATTAATCTTCCTGGTGCTG
TTGACTGGGTGATGATGCAGTCCTGTTTTGGCTTTCACTTCATGTTAGTCTTAGAGAAACAGGAAAAATA
CGATGGTCACCAGCAGTTCTTCGCAATCGTACAGCTGATAGGAACACGCAAGCAAGCTGAAAATTTTGCT
TACCGACTTGAGCTAAATGGTCATAGGCGACGATTGACTTGGGAAGCGACTCCTCGATCTATTCATGAAG
GAATTGCAACAGCCATTATGAATAGCGACTGTCTAGTCTTTGACACCAGCATTGCACAGCTTTTTTGCAG
AAAATGGCAATTTAGGCATCAATGTAACTATTTCCATGTGTTGAAATGGCAATCAAACATTTTCTGGCCA
GTGTTTAAAACTTCAGTTTCACAGAAAATAAGGCACCCATCTGTCTGCCAACCTAAAACTCTTTCGGTAG
GTGGAAGCTAGACACATGAAGGTAAATAAAAAGAAAGGCTGTTAAATACAGGAAACAGTTGCATGTAGTA
ACACTAATATATTTAAAAATAAGTCAACAGTAAACCACTGAAAAAATATATGTATATACACCCAAGATGG
GCATCTTTTGTATTAAGAAAGGAAGCATTGTAAAATAATTCTGAGTTTTGTGTTTGTTGTAGATTGATTG
TATTGTTGAAAAAGTTTGTTTTTGCGTGGGAGTGTGTGCCTGCGTGGGTGTGTGCGTGTTTGGGTTTTTT
TCCTTTAACTGACAAGCCATCTTGAGTGGTCATGGGCCACTGCTTTTCCCTTTGTGAGTCAATACATAGT
GCTGCTGTGTGCTTTTTTTGTGTGTATTTGCTAATTTTTATTAATTTTAGTTTTTCATTAAATAAATTTG
ACTTTTCTGTAATTCAGGTTTTTCCTTTTTTTGTACCATTTTAAAGTTAGTATCTTTTGATATGCATATT
TGTTTATGGTAAAAAATTTATAACGTGTTCAATATTTTCTTTTCCCCCATTAATCAGTTCATTAGAAATA
TTTTAAAATCAGCTATTTTGTGAAGCCATGAGTTCCAGAAAGTAAAGGTGACATCGGAAAAATAATCAAA
AGCTATTTAAAGCATCTATAAGGTGCTCTCTTTCTGTCTTCTACAGATGAGTCACACCTTTGAGCTTAAT
CTTTGAAAGGTTAGAGAATAAATTGATTTTTATAAATACTGCAAATCAGGCTTTTGTTTCCTTTTTCAGA
TATCTTGGACAAATCACATATTTTAAAATTTGTTCTTGTATTTATTGGTTTTGCAGAAGAAGGCATCGTC
ATGCACAGTATTTGTAATTAAAAGCAAATCATTTGTTTAAAAAGGCAGTTTGCAAAAAATGTTTTTGGTC
TTTTATAATTCTCATTAAAAGAATATCTGGCCATTTTTAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAA

Human SIAH1 mRNA sequence - var7 (public gi: 23274141) (SEQ ID NO: 141)

GTCCCGTCGGTCTCGGCGCCGGGAAGAGGCGGTGGCGCTGCCCGCGGTGGCGGGGGTTGGCGACGGAGCG
CGTTGGTGCCAGGACCGGGGTCCGAGGCGCGCTCTCCGCCCACAGAAATGAGCCGTCAGACTGCTACAGC
ATTACCTACCGGTACCTCGAAGTGTCCACCATCCCAGAGGGTGCCTGCCCTGACTGGCACAACTGCATCC
AACAATGACTTGGCGAGTCTTTTTGAGTGTCCAGTCTGCTTTGACTATGTGTTACCGCCCATTCTTCAAT
GTCAGAGTGGCCATCTTGTTTGTAGCAACTGTCGCCCAAAGCTCACATGTTGTCCAACTTGCCGGGGCCC
TTTGGGATCCATTCGCAACTTGGCTATGGAGAAAGTGGCTAATTCAGTACTTTTCCCCTGTAAATATGCG
TCTTCTGGATGTGAAATAACTCTGCCACACACAGAAAAAGCAGACCATGAAGAGCTCTGTGAGTTTAGGC
CTTATTCCTGTCCGTGCCCTGGTGCTTCCTGTAAATGGCAAGGCTCTCTGGATGCTGTAATGCCCCATCT
GATGCATCAGCATAAGTCCATTACAACCCTACAGGGAGAGGATATAGTTTTTCTTGCTACAGACATTAAT
CTTCCTGGTGCTGTTGACTGGGTGATGATGCAGTCCTGTTTTGGCTTTCACTTCATGTTAGTCTTAGAGA
AACAGGAAAAATACGATGGTCACCAGCAGTTCTTCGCAATCGTACAGCTGATAGGAACACGCAAGCAAGC
TGAAAATTTTGCTTACCGACTTGAGCTAAATGGTCATAGGCGACGATTGACTTGGGAAGCGACTCCTCGA
TCTATTCATGAAGGAATTGCAACAGCCATTATGAATAGCGACTGTCTAGTCTTTGACACCAGCATTGCAC
AGCTTTTTGCAGAAAATGGCAATTTAGGCATCAATGTAACTATTTCCATGTGTTGAAATGGCAATCAAAC
ATTTTCTGGCCAGTGTTTAAAACTTCAGTTTCACAGAAAATAAGGCACCCATCTGTCTGCCAACCTAAAA
CTCTTTCGGTAGGTGGAAGCTAGACACATGAAGGTAAATAAAAAGAAAGGCTGTTAAATACAGGAAACAG
TTGCATGTAGTAACACTAATATATTTAAAAATAAGTCAACAGTAAACCACTGAAAAAATATATGTATATA
CACCCAAGATGGGCATCTTTTGTATTAAGAAAGGAAGCATTGTAAAATAATTCTGAGTTTTGTGTTTGTT
GTAGATTGATTGTATTGTTGAAAAAGTTTGTTTTTGCGTGGGAGTGTGTGCCTGCGTGGGTGTGTGCGTG
TTTGGGTTTTTTTCCTTTAACTGACAAGCCATCTTGAGTGGTCATGGGCCACTGCTTTTCCCTTTGTGAG
TCAATACATAGTGCTGCTGTGTGCTTTTTTTGTGTGTATTTGCTAATTTTTATTAATTTTAGTTTTTCAT
TAAATAAATTTGACTTTTCTGTAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

Human SIAH1 Protein sequence - var1 (public gi: 27503514) (SEQ ID NO: 271)

MTGKATPPSLYSWRGVLFTCLPAARTRKRKEMSRQTATALPTGTSKCPPSQRVPALTGTTASNNDLASLF
ECPVCFDYVLPPILQCQSGHLVCSNCRPKLTCCPTCRGPLGSIRNLAMEKVANSVLFPCKYASSGCEITL
PHTEKADHEELCEFRPYSCPCPGASCKWQGSLDAVMPHLMHQHKSITTLQGEDIVFLATDINLPGAVDWV
MMQSCFGFHFMLVLEKQEKYDGHQQFFAIVQLIGTRKQAENFAYRLELNGHRRRLTWEATPRSIHEGIAT
AIMNSDCLVFDTSIAQLFAENGNLGINVTISMC

Human SIAH1 Protein sequence - var2 (public gi: 4506947) (SEQ ID NO: 272)

MSRQTATALPTGTSKCPPSQRVPALTGTTASNNDLASLFECPVCFDYVLPPILQCQSGHLVCSNCRPKLT
CCPTCRGPLGSIRNLAMEKVANSVLFPCKYASSGCEITLPHTEKADHEELCEFRPYSCPCPGASCKWQGS
LDAVMPHLMHQHKSITTLQGEDIVFLATDINLPGAVDWVMMQSCFGFHFMLVLEKQEKYDGHQQFFAIVQ
LIGTRKQAENFAYRLELNGHRRRLTWEATPRSIHEGIATAIMNSDCLVFDTSIAQLFAENGNLGINVTIS
MC

Figure 36 part - 79

Unigene Name: SMN1 Unigene ID: Hs.288986 Clone ID: GD_1114

Human SMN1 mRNA sequence - var1 (public gi: 624185) (SEQ ID NO: 142)

CGGGGCCCCACGCTGCGCATCCGCGGGTTTGCTATGGCGATGAGCAGCGGCGGCAGTGGTGGCGGCGTCC
CGGAGCAGGAGGATTCCGTGCTGTTCCGGCGCGGCACAGGCCAGAGCGATGATTCTGACATTTGGGATGA
TACAGCACTGATAAAAGCATATGATAAAGCTGTGGCTTCATTTAAGCATGCTCTAAAGAATGGTGACATT
TGTGAAACTTCGGGTAAACCAAAAACCACACCTAAAAGAAAACCTGCTAAGAAGAATAAAAGCCAAAAGA
AGAATACTGCAGCTTCCTTACAACAGTGGAAAGTTGGGGACAAATGTTCTGCCATTTGGTCAGAAGACGG
TTGCATTTACCCAGCTACCATTGCTTCAATTGATTTTAAGAGAGAAACCTGTGTTGTGGTTTACACTGGA
TATGGAAATAGAGAGGAGCAAAATCTGTCCGATCTACTTTCCCCAATCTGTGAAGTAGCTAATAATATAG
AACAGAATGCTCAAGAGAATGAAAATGAAAGCCAAGTTTCAACAGATGAAAGTGAGAACTCCAGGTCTCC
TGGAAATAAATCAGATAACATCAAGCCCAAATCTGCTCCATGGAACTCTTTTCTCCCTCCACCACCCCCC
ATGCCAGGGCCAAGACTGGGACCAGGAAAGCCAGGTCTAAAATTCAATGGCCCACCACCGCCACCGCCAC
CACCACCACCCCACTTACTATCATGCTGGCTGCCTCCATTTCCTTCTGGACCACCAATAATTCCCCCACC
ACCTCCCATATGTCCAGATTCTCTTGATGATGCTGATGCTTTGGGAAGTATGTTAATTTCATGGTACATG
AGTGGCTATCATACTGGCTATTATATGGGTTTCAGACAAAATCAAAAAGAAGGAAGGTGCTCACATTCCT
TAAATTAAGGAGAAATGCTGGCATAGAGCAGCACTAAATGACACCACTAAAGAAACGATCAGACAGATCT
GGAATGTGAAGCGTTATAGAAGATAACTGGCCTCATTTCTTCAAAATATCAAGTGTTGGGAAAGAAAAAA
GGAAGTGGAATGGGTAACTCTTCTTGATTAAAAGTTATGTAATAACCAAATGCAATGTGAAATATTTTAC
TGGACTCTTTTGAAAAACCATCTGTAAAAGACTGGGGTGGGGGTGGGAGGCCAGCACGGTGGTGAGGCAG
TTGAGAAAATTTGAATGTGGATTAGATTTTGAATGATATTGGATAATTATTGGTAATTTTATGGCCTGTG
AGAAGGGTGTTGTAGTTTATAAAAGACTGTCTTAATTTGCATACTTAAGCATTTAGGAATGAAGTGTTAG
AGTGTCTTAAAATGTTTCAAATGGTTTAACAAAATGTATGTGAGGCGTATGTGGCAAAATGTTACAGAAT
CTAACTGGTGGACATGGCTGTTCATTGTACTGTTTTTTTCTATCTTCTATATGTTTAAAAGTATATAATA
AAAATATTTAATTTTTTTTTA

Human SMN1 mRNA sequence - var2 (public gi: 15929773) (SEQ ID NO: 143)

GGCCCCACGCTGCGCACCCGCGGGTTTGCTATGGCGATGAGCAGCGGCGGCAGTGGTGGCGGCGTCCCGG
AGCAGGAGGATTCCGTGCTGTTCCGGCGCGGCACAGGCCAGAGCGATGATTCTGACATTTGGGATGATAC
AGCACTGATAAAAGCATATGATAAAGCTGTGGCTTCATTTAAGCATGCTCTAAAGAATGGTGACATTTGT
GAAACTTCGGGTAAACCAAAAACCACACCTAAAAGAAAACCTGCTAAGAAGAATAAAAGCCAAAAGAAGA
ATACTGCAGCTTCCTTACAACAGTGGAAAGTTGGGGACAAATGTTCTGCCATTTGGTCAGAAGACGGTTG
CATTTACCCAGCTACCATTGCTTCAATTGATTTTAAGAGAGAAACCTGTGTTGTGGTTTACACTGGATAT
GGAAATAGAGAGGAGCAAAATCTGTCCGATCTACTTTCCCCAATCTGTGAAGTAGCTAATAATATAGAAC
AGAATGCTCAAGAGAATGAAAATGAAAGCCAAGTTTCAACAGATGAAAGTGAGAACTCCAGGTCTCCTGG
AAATAAATCAGATAACATCAAGCCCAAATCTGCTCCATGGAACTCTTTTCTCCCTCCACCACCCCCCATG
CCAGGGCCAAGACTGGGACCAGGAAAGCCAGGTCTAAAATTCAATGGCCCACCACCGCCACCGCCACCAC
CACCACCCCACTTACTATCATGCTGGCTGCCTCCATTTCCTTCTGGACCACCAATAATTCCCCCACCACC
TCCCATATGTCCAGATTCTCTTGATGATGCTGATGCTTTGGGAAGTATGTTAATTTCATGGTACATGAGT
GGCTATCATACTGGCTATTATATGGGTTTTAGACAAAATCAAAAAGAAGGAAGGTGCTCACATTCCTTAA
ATTAAGGAGAAATGCTGGCATAGAGCAGCACTAAATGACACCACTAAAGAAACGATCAGACAGATCTGGA
ATGTGAAGCGTTATAGAAGATAACTGGCCTCATTTCTTCAAAATATCAAGTGTTGGGAAAGAAAAAAGGA
AGTGGAATGGGTAACTCTTCTTGATTAAAAGTTATGTAATAACCAAATGCAATGTGAAATATTTTACTGG
ACTCTATTTTGAAAAACCATCTGTAAAAGACTGAGGTGGGGGTGGGAGGCCAGCACGGTGGTGAGGCAGT
TGAGAAAATTTGAATGTGGATTAGATTTTGAATGATATTGGATAATTATTGGTAATTTTATGAGCTGTGA
GAAGGGTGTTGTAGTTTATAAAAGACTGTCTTAATTTGCATACTTAAGCATTTAGGAATGAAGTGTTAGA
GTGTCTTAAAATGTTTCAAATGGTTTAACAAAATGTATGTGAGGCGTATGTGGCAAAATGTTACAGAATC
TAACTGGTGGACATGGCTGTTCATTGTACTGTTTTTTTCTATCTTCTATATGTTTAAAAGTATATAATAA
AAATATTTAATTTTTTTTTAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

Human SMN1 mRNA sequence - var3 (public gi: 13259511) (SEQ ID NO: 144)

CCACAAATGTGGGAGGGCGATAACCACTCGTAGAAAGCGTGAGAAGTTACTACAAGCGGTCCTCCCGGCC
ACCGTACTGTTCCGCTCCCAGAAGCCCCGGGCGGCGGAAGTCGTCACTCTTAAGAAGGGACGGGGCCCCA
CGCTGCGCACCCGCGGGTTTGCTATGGCGATGAGCAGCGGCGGCAGTGGTGGCGGCGTCCCGGAGCAGGA
GGATTCCGTGCTGTTCCGGCGCGGCACAGGCCAGAGCGATGATTCTGACATTTGGGATGATACAGCACTG
ATAAAAGCATATGATAAAGCTGTGGCTTCATTTAAGCATGCTCTAAAGAATGGTGACATTTGTGAAACTT
CGGGTAAACCAAAAACCACACCTAAAAGAAAACCTGCTAAGAAGAATAAAAGCCAAAAGAAGAATACTGC
AGCTTCCTTACAACAGTGGAAAGTTGGGGACAAATGTTCTGCCATTTGGTCAGAAGACGGTTGCATTTAC
CCAGCTACCATTGCTTCAATTGATTTTAAGAGAGAAACCTGTGTTGTGGTTTACACTGGATATGGAAATA
GAGAGGAGCAAAATCTGTCCGATCTACTTTCCCCAATCTGTGAAGTAGCTAATAATATAGAACAGAATGC

Figure 36 part - 80

TCAAGAGAATGAAAATGAAAGCCAAGTTTCAACAGATGAAAGTGAGAACTCCAGGTCTCCTGGAAATAAA
TCAGATAACATCAAGCCCAAATCTGCTCCATGGAACTCTTTTCTCCCTCCACCACCCCCCATGCCAGGGC
CAAGACTGGGACCAGGAAAGATAATTCCCCCACCACCTCCCATATGTCCAGATTCTCTTGATGATGCTGA
TGCTTTGGGAAGTATGTTAATTTCATGGTACATGAGTGGCTATCATACTGGCTATTATATGGGTTTCAGA
CAAAATCAAAAAGAAGGAAGGTGCTCACATTCCTTAAATTAAGGAGAAATGCTGGCATAGAGCAGCACTA
AATGACACCACTAAAGAAACGATCAGACAGATCTGGAATGTGAAGCGTTATAGAAGATAACTGGCCTCAT
TTCTTCAAAATATCAAGTGTTGGGAAAGAAAAAAGGAAGTGGAATGGGTAACTCTTCTTGATTAAAAGTT
ATGTAATAACCAAATGCAATGTGAAATATTTTACTGGACTCTTTTGAAAAACCATCTGTAAAAGACTGGG
GTGGGGGTGGGAGGCCAGCACGGTGGTGAGGCAGTTGAGAAAATTTGAATGTGGATTAGATTTTGAATGA
TATTGGATAATTATTGGTAATTTTATGGCCTGTGAGAAGGGTGTTGTAGTTTATAAAAGACTGTCTTAAT
TTGCATACTTAAGCATTTAGGAATGAAGTGTTAGAGTGTCTTAAAATGTTTCAAATGGTTTAACAAAATG
TATGTGAGGCGTATGTGGCAAAATGTTACAGAATCTAACTGGTGGACATGGCTGTTCATTGTACTGTTTT
TTTCTATCTTCTATATGTTTAAAAGTATATAATAAAAATATTTAATTTTTTTTTA

Human SMN1 mRNA sequence - var4 (public gi: 13111817) (SEQ ID NO: 145)

GGGGCCCCACGCTGCGCACCCGCGGGTTTGCTATGGCGATGAGCAGCGGCGGCAGTGGTGGCGGCGTCCC
GGAGCAGGAGGATTCCGTGCTGTTCCGGCGCGGCACAGGCCAGAGCGATGATTCTGACATTTGGGATGAT
ACAGCACTGATAAAAGCATATGATAAAGCTGTGGCTTCATTTAAGCATGCTCTAAAGAATGGTGACATTT
GTGAAACTTCGGGTAAACCAAAAACCACACCTAAAAGAAAACCTGCTAAGAAGAATAAAAGCCAAAAGAA
GAATACTGCAGCTTCCTTACAACAGTGGAAAGTTGGGGACAAATGTTCTGCCATTTGGTCAGAAGACGGT
TGCATTTACCCAGCTACCATTGCTTCAATTGATTTTAAGAGAGAAACCTGTGTTGTGGTTTACACTGGAT
ATGGAAATAGAGAGGAGCAAAATCTGTCCGATCTACTTTCCCCAATCTGTGAAGTAGCTAATAATATAGA
ACAGAATGCTCAAGAGAATGAAAATGAAAGCCAAGTTTCAACAGATGAAAGTGAGAACTCCAGGTCTCCT
GGAAATAAATCAGATAACATCAAGCCCAAATCTGCTCCATGGAACTCTTTTCTCCCTCCACCACCCCCCA
TGCCAGGGCCAAGACTGGGACCAGGAAAGCCAGGTCTAAAATTCAATGGCCCACCACCGCCACCGCCACC
ACCACCACCCCACTTACTATCATGCTGGCTGCCTCCATTTCCTTCTGGACCACCAATAATTCCCCCACCA
CCTCCCATATGTCCAGATTCTCTTGATGATGCTGATGCTTTGGGAAGTATGTTAATTTCATGGTACATGA
GTGGCTATCATACTGGCTATTATATGGAAATGCTGGCATAGAGCAGCACTAAATGACACCACTAAAGAAA
CGATCAGACAGATCTGGAATGTGAAGCGTTATAGAAGATAACTGGCCTCATTTCTTCAAAATATCAAGTG
TTGGGAAAGAAAAAAGGAAGTGGAATGGGTAACTCTTCTTGATTAAAAGTTATGTAATAACCAAATGCAA
TGTGAAATATTTTACTGGACTCTATTTTGAAAAACCATCTGTAAAAGACTGAGGTGGGGGTGGGAGGCCA
GCACGGTGGTGAGGCAGTTGAGAAAATTTGAATGTGGATTAGATTTTGAATGATATTGGATAATTATTGG
TAATTTTATGAGCTGTGAGAAGGGTGTTGTAGTTTATAAAAGACTGTCTTAATTTGCATACTTAAGCATT
TAGGAATGAAGTGTTAGAGTGTCTTAAAATGTTTCAAATGGTTTAACAAAATGTATGTGAGGCGTATGTG
GCAAAATGTTACAGAATCTAACTGGTGGACATGGCTGTTCATTGTACTGTTTTTTTCTATCTTCTATATG
TTTAAAAGTATATAATAAAAATATTTAATTTTTTTTTAAAAA

Human SMN1 mRNA sequence - var5 (public gi: 13259515) (SEQ ID NO: 146)

CCACAAATGTGGGAGGGCGATAACCACTCGTAGAAAGCGTGAGAAGTTACTACAAGCGGTCCTCCCGGCC
ACCGTACTGTTCCGCTCCCAGAAGCCCCGGGCGGCGGAAGTCGTCACTCTTAAGAAGGGACGGGGCCCCA
CGCTGCGCACCCGCGGGTTTGCTATGGCGATGAGCAGCGGCGGCAGTGGTGGCGGCGTCCCGGAGCAGGA
GGATTCCGTGCTGTTCCGGCGCGGCACAGGCCAGAGCGATGATTCTGACATTTGGGATGATACAGCACTG
ATAAAAGCATATGATAAAGCTGTGGCTTCATTTAAGCATGCTCTAAAGAATGGTGACATTTGTGAAACTT
CGGGTAAACCAAAAACCACACCTAAAAGAAAACCTGCTAAGAAGAATAAAAGCCAAAAGAAGAATACTGC
AGCTTCCTTACAACAGTGGAAAGTTGGGGACAAATGTTCTGCCATTTGGTCAGAAGACGGTTGCATTTAC
CCAGCTACCATTGCTTCAATTGATTTTAAGAGAGAAACCTGTGTTGTGGTTTACACTGGATATGGAAATA
GAGAGGAGCAAAATCTGTCCGATCTACTTTCCCCAATCTGTGAAGTAGCTAATAATATAGAACAGAATGC
TCAAGAGAATGAAAATGAAAGCCAAGTTTCAACAGATGAAAGTGAGAACTCCAGGTCTCCTGGAAATAAA
TCAGATAACATCAAGCCCAAATCTGCTCCATGGAACTCTTTTCTCCCTCCACCACCCCCCATGCCAGGGC
CAAGACTGGGACCAGGAAAGCCAGGTCTAAAATTCAATGGCCCACCACCGCCACCGCCACCACCACCACC
CCACTTACTATCATGCTGGCTGCCTCCATTTCCTTCTGGACCACCAATAATTCCCCCACCACCTCCCATA
TGTCCAGATTCTCTTGATGATGCTGATGCTTTGGGAAGTATGTTAATTTCATGGTACATGAGTGGCTATC
ATACTGGCTATTATATGGGTTTCAGACAAAATCAAAAAGAAGGAAGGTGCTCACATTCCTTAAATTAAGG
AGAAATGCTGGCATAGAGCAGCACTAAATGACACCACTAAAGAAACGATCAGACAGATCTGGAATGTGAA
GCGTTATAGAAGATAACTGGCCTCATTTCTTCAAAATATCAAGTGTTGGGAAAGAAAAAAGGAAGTGGAA
TGGGTAACTCTTCTTGATTAAAAGTTATGTAATAACCAAATGCAATGTGAAATATTTTACTGGACTCTTT
TGAAAAACCATCTGTAAAAGACTGGGGTGGGGGTGGGAGGCCAGCACGGTGGTGAGGCAGTTGAGAAAAT
TTGAATGTGGATTAGATTTTGAATGATATTGGATAATTATTGGTAATTTTATGGCCTGTGAGAAGGGTGT
TGTAGTTTATAAAAGACTGTCTTAATTTGCATACTTAAGCATTTAGGAATGAAGTGTTAGAGTGTCTTAA
AATGTTTCAAATGGTTTAACAAAATGTATGTGAGGCGTATGTGGCAAAATGTTACAGAATCTAACTGGTG
GACATGGCTGTTCATTGTACTGTTTTTTTCTATCTTCTATATGTTTAAAAGTATATAATAAAAATATTTA
ATTTTTTTTTA

Figure 36 part - 81

Human SMN1 Protein sequence - var1 (public gi: 13259512) (SEQ ID NO: 273)
MAMSSGGSGGGVPEQEDSVLFRRGTGQSDDSDIWDDTALIKAYDKAVASFKHALKNGDICETSGKPKTTP
KRKPAKKNKSQKKNTAASLQQWKVGDKCSAIWSEDGCIYPATIASIDFKRETCVVVYTGYGNREEQNLSD
LLSPICEVANNIEQNAQENENESQVSTDESENSRSPGNKSDNIKPKSAPWNSFLPPPPPMPGPRLGPGKI
IPPPPPICPDSLDDADALGSMLISWYMSGYHTGYYMGFRQNQKEGRCSHSLN

Human SMN1 Protein sequence - var2 (public gi: 12654181) (SEQ ID NO: 274)
MAMSSGGSGGGVPEQEDSVLFRRGTGQSDDSDIWDDTALIKAYDKAVASFKHALKNGDICETSGKPKTTP
KRKPAKKNKSQKKNTAASLQQWKVGDKCSAIWSEDGCIYPATIASIDFKRETCVVVYTGYGNREEQNLSD
LLSPICEVANNIEQNAQENENESQVSTDESENSRSPGNKSDNIKPKSAPWNSFLPPPPPMPGPRLGPGKP
GLKFNGPPPPPPPPPPHLLSCWLPPFPSGPPIIPPPPPICPDSLDDADALGSMLISWYMSGYHTGYYMEM
LA

Human SMN1 Protein sequence - var3 (public gi: 4507091) (SEQ ID NO: 275)
MAMSSGGSGGGVPEQEDSVLFRRGTGQSDDSDIWDDTALIKAYDKAVASFKHALKNGDICETSGKPKTTP
KRKPAKKNKSQKKNTAASLQQWKVGDKCSAIWSEDGCIYPATIASIDFKRETCVVVYTGYGNREEQNLSD
LLSPICEVANNIEQNAQENENESQVSTDESENSRSPGNKSDNIKPKSAPWNSFLPPPPPMPGPRLGPGKP
GLKFNGPPPPPPPPPPHLLSCWLPPFPSGPPIIPPPPPICPDSLDDADALGSMLISWYMSGYHTGYYMGF
RQNQKEGRCSHSLN

Human SMN2 mRNA sequence - var1 (public gi: 736410) (SEQ ID NO: 147)
GCGATGAGCAGCGGCGGCAGTGGTGGCGGCGTCCCGGAGCAGGAGGATTCCGTGCTGTTCCGGCGCGGCA
CAGGCCAGAGCGATGATTCTGACATTTGGGATGATACAGCACTGATAAAAGCATATGATAAAGCTGTGGC
TTCATTTAAGCATGCTCTAAAGAATGGTGACATTTGTGAAACTTCGGGTAAACCAAAAACCACACCTAAA
AGAAAACCTGCTAAGAAGAATAAAAGCCAAAAGAAGAATACTGCAGCTTCCTTACAACAGTGGAAAGTTG
GGGACAAATGTTCTGCCATTTGGTCAGAAGACGGTTGCATTTACCCAGCTACCATTGCTTCAATTGATTT
TAAGAGAGAAACCTGTGTTGTGGTTTACACTGGATATGGAAATAGAGAGGAGCAAAATCTGTCCGATCTA
CTTTCCCCAATCTGTGAAGTAGCTAATAATATAGAACAGAATGCTCAAGAGAATGAAAATGAAAGCCAAG
TTTCAACAGATGAAAGTGAGAACTCCAGGTCTCCTGGAAATAAATCAGATAACATCAAGCCCAAATCTGC
TCCATGGAACTCTTTTCTCCCTCCACCACCCCCCATGCCAGGGCCAAGACTGGGACCAGGAAAGCCAGGT
CTAAAATTCAATGGCCCACCACCGCCACCGCCACCACCACCACCCCACTTACTATCATGCTGGCTGCCTC
CATTTCCTTCTGGACCACCAATAATTCCCCCACCACCTCCCATATGTCCAGATTCTCTTGATGATGCTGA
TGCTTTGGGAAGTATGTTAATTTCATGGTACATGAGTGGCTATCATACTGGCTATTATATGGGTTTTAGA
CAAAATCAAAAAGAAGGAAGGTGCTCACATTCCTTAAATTAAGGAGAAATGCTGGCATAGAGCAGCACTA
AATGACACCACTAAAGAAACGATCAGACAGATCTGGAATGTGAAGCGTTATAGAAGATAACTGGCCTCAT
TTCTTCAAAATATCAAGTGTTGGGAAAGAAAAAAGGAAGTGGAATGGGTAACTCTTCTTGATTAAAAGTT
ATGTAATAACCAAATGCAATGTGAAATATTTTACTGGACTCTATTTTGAAAAACCATCTGTAAAAGACTG
AGGTGGGGGTGGGAGGCCAGCACGGTGGTGAGGCAGTTGAGAAAATTTGAATGTGGATTAGACTTTGAAT
GATATTGGATAATTATTGGTAATTTTATGAGCTGTGAGAAGGGTGTTGTAGTTTATAAAAGACTGTCTTA
ATTTGCATACTTAAGCATTTAGGAATGAAGTGTTAGAGTGTCTTAAAATGTTTCAAATGGTTTAACAAAA
TGTATGTGAGGCGTATGTGGCAAAATGTTACAGAATCTAACTGGTGGACATGGCTGTTCATTGTACTGTT
TTTTTCTATCTTCTATATGTTTAAAAGTATATAATAAAAATATTTAATTTTTTTTTAAAAAAAAAA

Human SMN2 mRNA sequence - var2 (public gi: 13259530) (SEQ ID NO: 148)
CCACAAATGTGGGAGGGCGATAACCACTCGTAGAAAGCGTGAGAAGTTACTACAAGCGGTCCTCCCGGCC
ACCGTACTGTTCCGCTCCCAGAAGCCCCGGGCGGCGGAAGTCGTCACTCTTAAGAAGGGACGGGGCCCCA
CGCTGCGCACCCGCGGGTTTGCTATGGCGATGAGCAGCGGCGGCAGTGGTGGCGGCGTCCCGGAGCAGGA
GGATTCCGTGCTGTTCCGGCGCGGCACAGGCCAGAGCGATGATTCTGACATTTGGGATGATACAGCACTG
ATAAAAGCATATGATAAAGCTGTGGCTTCATTTAAGCATGCTCTAAAGAATGGTGACATTTGTGAAACTT
CGGGTAAACCAAAAACCACACCTAAAAGAAAACCTGCTAAGAAGAATAAAAGCCAAAAGAAGAATACTGC
AGCTTCCTTACAACAGTGGAAAGTTGGGGACAAATGTTCTGCCATTTGGTCAGAAGACGGTTGCATTTAC
CCAGCTACCATTGCTTCAATTGATTTTAAGAGAGAAACCTGTGTTGTGGTTTACACTGGATATGGAAATA
GAGAGGAGCAAAATCTGTCCGATCTACTTTCCCCAATCTGTGAAGTAGCTAATAATATAGAACAGAATGC
TCAAGAGAATGAAAATGAAAGCCAAGTTTCAACAGATGAAAGTGAGAACTCCAGGTCTCCTGGAAATAAA
TCAGATAACATCAAGCCCAAATCTGCTCCATGGAACTCTTTTCTCCCTCCACCACCCCCCATGCCAGGGC
CAAGACTGGGACCAGGAAAGATAATTCCCCCACCACCTCCCATATGTCCAGATTCTCTTGATGATGCTGA
TGCTTTGGGAAGTATGTTAATTTCATGGTACATGAGTGGCTATCATACTGGCTATTATATGGAAATGCTG
GCATAGAGCAGCACTAAATGACACCACTAAAGAAACGATCAGACAGATCTGGAATGTGAAGCGTTATAGA
AGATAACTGGCCTCATTTCTTCAAAATATCAAGTGTTGGGAAAGAAAAAAGGAAGTGGAATGGGTAACTC
TTCTTGATTAAAAGTTATGTAATAACCAAATGCAATGTGAAATATTTTACTGGACTCTTTTGAAAAACCA

Figure 36 part - 82

TCTGTAAAAGACTGAGGTGGGGGTGGGAGGCCAGCACGGTGGTGAGGCAGTTGAGAAAATTTGAATGTGG
ATTAGATTTTGAATGATATTGGATAATTATTGGTAATTTTATGGCCTGTGAGAAGGGTGTTGTAGTTTAT
AAAAGACTGTCTTAATTTGCATACTTAAGCATTTAGGAATGAAGTGTTAGAGTGTCTTAAAATGTTTCAA
ATGGTTTAACAAAATGTATGTGAGGCGTATGTGGCAAAATGTTACAGAATCTAACTGGTGGACATGGCTG
TTCATTGTACTGTTTTTTTCTATCTTCTATATGTTTAAAAGTATATAATAAAAATATTTAATTTTTTTTT
AAA

Human SMN2 mRNA sequence - var3 (public gi: 13259528) (SEQ ID NO: 149)
CCACAAATGTGGGAGGGCGATAACCACTCGTAGAAAGCGTGAGAAGTTACTACAAGCGGTCCTCCCGGCC
ACCGTACTGTTCCGCTCCCAGAAGCCCCGGGCGGCGGAAGTCGTCACTCTTAAGAAGGGACGGGGCCCCA
CGCTGCGCACCCGCGGGTTTGCTATGGCGATGAGCAGCGGCGGCAGTGGTGGCGGCGTCCCGGAGCAGGA
GGATTCCGTGCTGTTCCGGCGCGGCACAGGCCAGAGCGATGATTCTGACATTTGGGATGATACAGCACTG
ATAAAAGCATATGATAAAGCTGTGGCTTCATTTAAGCATGCTCTAAAGAATGGTGACATTTGTGAAACTT
CGGGTAAACCAAAAACCACACCTAAAAGAAAACCTGCTAAGAAGAATAAAAGCCAAAAGAAGAATACTGC
AGCTTCCTTACAACAGTGGAAAGTTGGGGACAAATGTTCTGCCATTTGGTCAGAAGACGGTTGCATTTAC
CCAGCTACCATTGCTTCAATTGATTTTAAGAGAGAAACCTGTGTTGTGGTTTACACTGGATATGGAAATA
GAGAGGAGCAAAATCTGTCCGATCTACTTTCCCCAATCTGTGAAGTAGCTAATAATATAGAACAGAATGC
TCAAGAGAATGAAAATGAAAGCCAAGTTTCAACAGATGAAAGTGAGAACTCCAGGTCTCCTGGAAATAAA
TCAGATAACATCAAGCCCAAATCTGCTCCATGGAACTCTTTTCTCCCTCCACCACCCCCCATGCCAGGGC
CAAGACTGGGACCAGGAAAGATAATTCCCCCACCACCTCCCATATGTCCAGATTCTCTTGATGATGCTGA
TGCTTTGGGAAGTATGTTAATTTCATGGTACATGAGTGGCTATCATACTGGCTATTATATGGGTTTTAGA
CAAAATCAAAAAGAAGGAAGGTGCTCACATTCCTTAAATTAAGGAGAAATGCTGGCATAGAGCAGCACTA
AATGACACCACTAAAGAAACGATCAGACAGATCTGGAATGTGAAGCGTTATAGAAGATAACTGGCCTCAT
TTCTTCAAAATATCAAGTGTTGGGAAAGAAAAAAGGAAGTGGAATGGGTAACTCTTCTTGATTAAAAGTT
ATGTAATAACCAAATGCAATGTGAAATATTTTACTGGACTCTTTTGAAAAACCATCTGTAAAAGACTGAG
GTGGGGGTGGGAGGCCAGCACGGTGGTGAGGCAGTTGAGAAAATTTGAATGTGGATTAGATTTTGAATGA
TATTGGATAATTATTGGTAATTTTATGGCCTGTGAGAAGGGTGTTGTAGTTTATAAAAGACTGTCTTAAT
TTGCATACTTAAGCATTTAGGAATGAAGTGTTAGAGTGTCTTAAAATGTTTCAAATGGTTTAACAAAATG
TATGTGAGGCGTATGTGGCAAAATGTTACAGAATCTAACTGGTGGACATGGCTGTTCATTGTACTGTTTT
TTTCTATCTTCTATATGTTTAAAAGTATATAATAAAAATATTTAATTTTTTTTTAAA

Human SMN2 mRNA sequence - var4 (public gi: 13259526) (SEQ ID NO: 150)
CCACAAATGTGGGAGGGCGATAACCACTCGTAGAAAGCGTGAGAAGTTACTACAAGCGGTCCTCCCGGCC
ACCGTACTGTTCCGCTCCCAGAAGCCCCGGGCGGCGGAAGTCGTCACTCTTAAGAAGGGACGGGGCCCCA
CGCTGCGCACCCGCGGGTTTGCTATGGCGATGAGCAGCGGCGGCAGTGGTGGCGGCGTCCCGGAGCAGGA
GGATTCCGTGCTGTTCCGGCGCGGCACAGGCCAGAGCGATGATTCTGACATTTGGGATGATACAGCACTG
ATAAAAGCATATGATAAAGCTGTGGCTTCATTTAAGCATGCTCTAAAGAATGGTGACATTTGTGAAACTT
CGGGTAAACCAAAAACCACACCTAAAAGAAAACCTGCTAAGAAGAATAAAAGCCAAAAGAAGAATACTGC
AGCTTCCTTACAACAGTGGAAAGTTGGGGACAAATGTTCTGCCATTTGGTCAGAAGACGGTTGCATTTAC
CCAGCTACCATTGCTTCAATTGATTTTAAGAGAGAAACCTGTGTTGTGGTTTACACTGGATATGGAAATA
GAGAGGAGCAAAATCTGTCCGATCTACTTTCCCCAATCTGTGAAGTAGCTAATAATATAGAACAGAATGC
TCAAGAGAATGAAAATGAAAGCCAAGTTTCAACAGATGAAAGTGAGAACTCCAGGTCTCCTGGAAATAAA
TCAGATAACATCAAGCCCAAATCTGCTCCATGGAACTCTTTTCTCCCTCCACCACCCCCCATGCCAGGGC
CAAGACTGGGACCAGGAAAGCCAGGTCTAAAATTCAATGGCCCACCACCGCCACCGCCACCACCACCACC
CCACTTACTATCATGCTGGCTGCCTCCATTTCCTTCTGGACCACCAATAATTCCCCCACCACCTCCCATA
TGTCCAGATTCTCTTGATGATGCTGATGCTTTGGGAAGTATGTTAATTTCATGGTACATGAGTGGCTATC
ATACTGGCTATTATATGGAAATGCTGGCATAGAGCAGCACTAAATGACACCACTAAAGAAACGATCAGAC
AGATCTGGAATGTGAAGCGTTATAGAAGATAACTGGCCTCATTTCTTCAAAATATCAAGTGTTGGGAAAG
AAAAAAGGAAGTGGAATGGGTAACTCTTCTTGATTAAAAGTTATGTAATAACCAAATGCAATGTGAAATA
TTTTACTGGACTCTTTTGAAAAACCATCTGTAAAAGACTGAGGTGGGGGTGGGAGGCCAGCACGGTGGTG
AGGCAGTTGAGAAAATTTGAATGTGGATTAGATTTTGAATGATATTGGATAATTATTGGTAATTTTATGG
CCTGTGAGAAGGGTGTTGTAGTTTATAAAAGACTGTCTTAATTTGCATACTTAAGCATTTAGGAATGAAG
TGTTAGAGTGTCTTAAAATGTTTCAAATGGTTTAACAAAATGTATGTGAGGCGTATGTGGCAAAATGTTA
CAGAATCTAACTGGTGGACATGGCTGTTCATTGTACTGTTTTTTTCTATCTTCTATATGTTTAAAAGTAT
ATAATAAAAATATTTAATTTTTTTTTAAA

Human SMN2 mRNA sequence - var5 (public gi: 13259525) (SEQ ID NO: 151)
CCACAAATGTGGGAGGGCGATAACCACTCGTAGAAAGCGTGAGAAGTTACTACAAGCGGTCCTCCCGGCC
ACCGTACTGTTCCGCTCCCAGAAGCCCCGGGCGGCGGAAGTCGTCACTCTTAAGAAGGGACGGGGCCCCA
CGCTGCGCACCCGCGGGTTTGCTATGGCGATGAGCAGCGGCGGCAGTGGTGGCGGCGTCCCGGAGCAGGA
GGATTCCGTGCTGTTCCGGCGCGGCACAGGCCAGAGCGATGATTCTGACATTTGGGATGATACAGCACTG
ATAAAAGCATATGATAAAGCTGTGGCTTCATTTAAGCATGCTCTAAAGAATGGTGACATTTGTGAAACTT

Figure 36 part - 83

CGGGTAAACCAAAAACCACACCTAAAAGAAAACCTGCTAAGAAGAATAAAAGCCAAAAGAAGAATACTGC
AGCTTCCTTACAACAGTGGAAAGTTGGGGACAAATGTTCTGCCATTTGGTCAGAAGACGGTTGCATTTAC
CCAGCTACCATTGCTTCAATTGATTTTAAGAGAGAAACCTGTGTTGTGGTTTACACTGGATATGGAAATA
GAGAGGAGCAAAATCTGTCCGATCTACTTTCCCCAATCTGTGAAGTAGCTAATAATATAGAACAGAATGC
TCAAGAGAATGAAAATGAAAGCCAAGTTTCAACAGATGAAAGTGAGAACTCCAGGTCTCCTGGAAATAAA
TCAGATAACATCAAGCCCAAATCTGCTCCATGGAACTCTTTTCTCCCTCCACCACCCCCCATGCCAGGGC
CAAGACTGGGACCAGGAAAGCCAGGTCTAAAATTCAATGGCCCACCACCGCCACCGCCACCACCACCACC
CCACTTACTATCATGCTGGCTGCCTCCATTTCCTTCTGGACCACCAATAATTCCCCCACCACCTCCCATA
TGTCCAGATTCTCTTGATGATGCTGATGCTTTGGGAAGTATGTTAATTTCATGGTACATGAGTGGCTATC
ATACTGGCTATTATATGGGTTTTAGACAAAATCAAAAAGAAGGAAGGTGCTCACATTCCTTAAATTAAGG
AGAAATGCTGGCATAGAGCAGCACTAAATGACACCACTAAAGAAACGATCAGACAGATCTGGAATGTGAA
GCGTTATAGAAGATAACTGGCCTCATTTCTTCAAAATATCAAGTGTTGGGAAAGAAAAAAGGAAGTGGAA
TGGGTAACTCTTCTTGATTAAAAGTTATGTAATAACCAAATGCAATGTGAAATATTTTACTGGACTCTTT
TGAAAAACCATCTGTAAAAGACTGAGGTGGGGGTGGGAGGCCAGCACGGTGGTGAGGCAGTTGAGAAAAT
TTGAATGTGGATTAGATTTTGAATGATATTGGATAATTATTGGTAATTTTATGGCCTGTGAGAAGGGTGT
TGTAGTTTATAAAAGACTGTCTTAATTTGCATACTTAAGCATTTAGGAATGAAGTGTTAGAGTGTCTTAA
AATGTTTCAAATGGTTTAACAAAATGTATGTGAGGCGTATGTGGCAAAATGTTACAGAATCTAACTGGTG
GACATGGCTGTTCATTGTACTGTTTTTTTCTATCTTCTATATGTTTAAAAGTATATAATAAAAATATTTA
ATTTTTTTTTAAA

Human SMN2 Protein sequence - var1 (public gi: 736411) (SEQ ID NO: 276)
AMSSGGSGGGVPEQEDSVLFRRGTGQSDDSDIWDDTALIKAYDKAVASFKHALKNGDICETSGKPKTTPK
RKPAKKNKSQKKNTAASLQQWKVGDKCSAIWSEDGCIYPATIASIDFKRETCVVVYTGYGNREEQNLSDL
LSPICEVANNIEQNAQENENESQVSTDESENSRSPGNKSDNIKPKSAPWNSFLPPPPPMPGPRLGPGKPG
LKFNGPPPPPPPPPPHLLSCWLPPFPSGPPIIPPPPPICPDSLDDADALGSMLISWYMSGYHTGYYMGFR
QNQKEGRCSHSLN

Human SMN2 Protein sequence - var2 (public gi: 13259531) (SEQ ID NO: 277)
MAMSSGGSGGGVPEQEDSVLFRRGTGQSDDSDIWDDTALIKAYDKAVASFKHALKNGDICETSGKPKTTP
KRKPAKKNKSQKKNTAASLQQWKVGDKCSAIWSEDGCIYPATIASIDFKRETCVVVYTGYGNREEQNLSD
LLSPICEVANNIEQNAQENENESQVSTDESENSRSPGNKSDNIKPKSAPWNSFLPPPPPMPGPRLGPGKI
IPPPPPICPDSLDDADALGSMLISWYMSGYHTGYYMEMLA

Human SMN2 Protein sequence - var3 (public gi: 13259529) (SEQ ID NO: 278)
MAMSSGGSGGGVPEQEDSVLFRRGTGQSDDSDIWDDTALIKAYDKAVASFKHALKNGDICETSGKPKTTP
KRKPAKKNKSQKKNTAASLQQWKVGDKCSAIWSEDGCIYPATIASIDFKRETCVVVYTGYGNREEQNLSD
LLSPICEVANNIEQNAQENENESQVSTDESENSRSPGNKSDNIKPKSAPWNSFLPPPPPMPGPRLGPGKI
IPPPPPICPDSLDDADALGSMLISWYMSGYHTGYYMGFRQNQKEGRCSHSLN

Human SMN2 Protein sequence - var4 (public gi: 13259527) (SEQ ID NO: 279)
MAMSSGGSGGGVPEQEDSVLFRRGTGQSDDSDIWDDTALIKAYDKAVASFKHALKNGDICETSGKPKTTP
KRKPAKKNKSQKKNTAASLQQWKVGDKCSAIWSEDGCIYPATIASIDFKRETCVVVYTGYGNREEQNLSD
LLSPICEVANNIEQNAQENENESQVSTDESENSRSPGNKSDNIKPKSAPWNSFLPPPPPMPGPRLGPGKP
GLKFNGPPPPPPPPPPHLLSCWLPPFPSGPPIIPPPPPICPDSLDDADALGSMLISWYMSGYHTGYYMEM
LA

Human SMN2 Protein sequence - var5 (public gi: 10937869) (SEQ ID NO: 280)
MAMSSGGSGGGVPEQEDSVLFRRGTGQSDDSDIWDDTALIKAYDKAVASFKHALKNGDICETSGKPKTTP
KRKPAKKNKSQKKNTAASLQQWKVGDKCSAIWSEDGCIYPATIASIDFKRETCVVVYTGYGNREEQNLSD
LLSPICEVANNIEQNAQENENESQVSTDESENSRSPGNKSDNIKPKSAPWNSFLPPPPPMPGPRLGPGKP
GLKFNGPPPPPPPPPPHLLSCWLPPFPSGPPIIPPPPPICPDSLDDADALGSMLISWYMSGYHTGYYMGF
RQNQKEGRCSHSLN

Unigene Name: SNX1 Unigene ID: Hs.498154

Human SNX1 mRNA sequence - var1 (public gi: 3152939) (SEQ ID NO: 152)
ATGGCGTCGGGTGGTGGTGGCTGTAGCGCTTCGGAGAGACTGCCTCCGCCCTTCCCCGGCCTGGAGCCGG
AGTCCGAGGGGGCGGCCGGGGGATCAGAACCCGAGGCTGGGGACAGCGACACCGAGGGGGAGGACATTTT
CACCGGCGCCGCGGTGGTCAGTAAACATCAGTCTCCAAAGATAACTACATCCCTTCTTCCCATCAACAAT

Figure 36 part - 84

GGCTCCAAAGAAAATGGGATCCATGAAGAACAAGACCAAGAGCCACAGGATCTCTTTGCAGATGCCACAG
TGGAGCTATCCTTGGACAGCACACAAAATAATCAGAAGAAGGTGCTAGCCAAAACACTCATTTCTCTTTC
TCCTCAGGAAGCCACAAATTCTTCGAAGCCCCAGCCAACCTATGAGGAGCTAGAGGAAGAAGAACAGGAG
GATCAATTTGATTTGACAGTCGGTATAACTGATCCTGAGAAGATAGGGGATGGTATGAATGCATATGTAG
CCTACAAAGTTACAACACAGACAAGCTTACCATTGTTCAGAAGCAAACAGTTTGCAGTAAAAAGAAGATT
TAGTGACTTTCTGGGTCTTTATGAGAAGCTTTCCGAGAAGCACTCTCAGAATGGCTTCATTGTCCCTCCA
TCCCCGGAGAAGAGCCTCATAGGGATGACAAAAGTGAAAGTTGGGAAGGAAGATTCTTCTTCTGCAGAAT
TTCTTGAAAAACGGAGGGCCGCTTTAGAAAGGTACCTTCAGAGGATTGTAAATCATCCTACCATGTTACA
GGACCCTGACGTCAGAGAGTTCTTGGAAAAAGAAGAGCTGCCACGTGCCGTGGGTACCCAGACATTGAGT
GGTGCTGGTCTCCTCAAGATGTTCAACAAAGCCACAGATGCCGTCAGCAAAATGACCATCAAGATGAATG
AATCAGACATTTGGTTTGAGGAGAAGCTCCAGGAGGTAGAGTGTGAGGAGCAGCGCTTACGGAAACTGCA
TGCTGTTGTAGAAACTCTAGTCAACCATAGGAAAGAGCTAGCGCTGAACACAGCCCAGTTTGCAAAGAGT
CTAGCCATGCTTGGGAGCTCTGAGGACAACACGGCATTGTCACGGGCACTCTCCCAGCTGGCTGAGGTGG
AAGAAAAAATTGAGCAGCTCCACCAGGAACAGGCCAACAATGACTTCTTCCTCCTTGCTGAGCTCCTGAG
TGACTACATTCGCCTCCTGGCCATAGTCCGCGCTGCCTTCGACCAGCGCATGAAGACATGGCAGCGCTGG
CAGGATGCCCAAGCCACACTGCAGAAGAAGCGGGAGGCCGAGGCTCGGCTGCTGTGGGCCAACAAGCCTG
ATAAGCTGCAGCAGGCCAAGGACGAGATCCTCGAGTGGGAGTCTCGGGTGACTCAATATGAAAGGGACTT
CGAGAGGATTTCAACAGTGGTCCGAAAAGAAGTGATACGGTTTGAGAAAGAGAAATCCAAGGACTTCAAG
AACCACGTGATCAAGTACCTTGAGACACTCCTTTACTCACAGCAGCAGCTGGCAAAGTACTGGGAAGCCT
TCCTTCCTGAGGCAAAGGCCATCTCCTAA

Human SNX1 mRNA sequence - var2 (public gi: 3152941) (SEQ ID NO: 153)

ATGGCGTCGGGTGGTGGTGGCTGTAGCGCTTCGGAGAGACTGCCTCCGCCCTTCCCCGGCCTGGAGCCGG
AGTCCGAGGGGGCGGCCGGGGGATCAGAACCCGAGGCTGGGGACAGCGACACCGAGGGGGAGGACATTTT
CACCGGCGCCGCGGTGGTCAGTAAACATCAGTCTCCAAAGATAACTACATCCCTTCTTCCCATCAACAAT
GGCTCCAAAGAAAATGGGATCCATGAAGAACAAGACCAAGAGCCACAGGATCTCTTTGCAGGGGATGGTA
TGAATGCATATGTAGCCTACAAAGTTACAACACAGACAAGCTTACCATTGTTCAGAAGCAAACAGTTTGC
AGTAAAAAGAAGATTTAGTGACTTTCTGGGTCTTTATGAGAAGCTTTCCGAGAAGCACTCTCAGAATGGC
TTCATTGTCCCTCCATCCCCGGAGAAGAGCCTCATAGGGATGACAAAAGTGAAAGTTGGGAAGGAAGATT
CTTCTTCTGCAGAATTTCTTGAAAAACGGAGGGCCGCTTTAGAAAGGTACCTTCAGAGGATTGTAAATCA
TCCTACCATGTTACAGGACCCTGACGTCAGAGAGTTCTTGGAAAAAGAAGAGCTGCCACGTGCCGTGGGT
ACCCAGACATTGAGTGGTGCTGGTCTCCTCAAGATGTTCAACAAAGCCACAGATGCCGTCAGCAAAATGA
CCATCAAGATGAATGAATCAGACATTTGGTTTGAGGAGAAGCTCCAGGAGGTAGAGTGTGAGGAGCAGCG
CTTACGGAAACTGCATGCTGTTGTAGAAACTCTAGTCAACCATAGGAAAGAGCTAGCGCTGAACACAGCC
CAGTTTGCAAAGAGTCTAGCCATGCTTGGGAGCTCTGAGGACAACACGGCATTGTCACGGGCACTCTCCC
AGCTGGCTGAGGTGGAAGAAAAAATTGAGCAGCTCCACCAGGAACAGGCCAACAATGACTTCTTCCTCCT
TGCTGAGCTCCTGAGTGACTACATTCGCCTCCTGGCCATAGTCCGCGCTGCCTTCGACCAGCGCATGAAG
ACATGGCAGCGCTGGCAGGATGCCCAAGCCACACTGCAGAAGAAGCGGGAGGCCGAGGCTCGGCTGCTGT
GGGCCAACAAGCCTGATAAGCTGCAGCAGGCCAAGGACGAGATCCTCGAGTGGGAGTCTCGGGTGACTCA
ATATGAAAGGGACTTCGAGAGGATTTCAACAGTGGTCCGAAAAGAAGTGATACGGTTTGAGAAAGAGAAA
TCCAAGGACTTCAAGAACCACGTGATCAAGTACCTTGAGACACTCCTTTACTCACAGCAGCAGCTGGCAA
AGTACTGGGAAGCCTTCCTTCCTGAGGCAAAGGCCATCTCCTAA

Human SNX1 mRNA sequence - var3 (public gi: 30582804) (SEQ ID NO: 154)

ATGGCGTCGGGTGGTGGTGGCTGTAGCGCTTCGGAGAGACTGCCTCCGCCCTTCCCCGGCCTGGAGCCGG
AGTCCGAGGGGGCGGCCGGGGGATCAGAACCCGAGGCTGGGGACAGCGACACCGAGGGGGAGGACATTTT
CACCGGCGCCGCGGTGGTCAGTAAACATCAGTCTCCAAAGATAACTACATCCCTTCTTCCCATCAACAAT
GGCTCCAAAGAAAATGGGATCCATGAAGAACAAGACCAAGAGCCACAGGATCTCTTTGCAGATGCCACAG
TGGAGCTATCCTTGGACAGCACACAAAATAATCAGAAGAAGGTGCTAGCCAAAACACTCATTTCTCTTCC
TCCTCAGGAAGCCACAAATTCTTCGAAGCCCCAGCCAACCTATGAGGAGCTAGAGGAAGAAGAACAGGAG
GATCAATTTGATTTGACAGTCGGTATAACTGATCCTGAGAAGATAGGGGATGGTATGAATGCATATGTAG
CCTACAAAGTTACAACACAGACAAGCTTACCATTGTTCAGAAGCAAACAGTTTGCAGTAAAAAGAAGATT
TAGTGACTTTCTGGGTCTTTATGAGAAGCTTTCCGAGAAGCACTCTCAGAATGGCTTCATTGTCCCTCCA
CCCCCGGAGAAGAGCCTCATAGGGATGACAAAAGTGAAAGTTGGGAAGGAAGATTCTTCTTCTGCAGAAT
TTCTTGAAAAACGGAGGGCCGCTTTAGAAAGGTACCTTCAGAGGATTGTAAATCATCCTACCATGTTACA
GGACCCTGACGTCAGAGAGTTCTTGGAAAAAGAAGAGCTGCCACGTGCCGTGGGTACCCAGACATTGAGT
GGTGCTGGTCTCCTCAAGATGTTCAACAAAGCCACAGATGCCGTCAGCAAAATGACCATCAAGATGAATG
AATCAGACATTTGGTTTGAGGAGAAGCTCCAGGAGGTAGAGTGTGAGGAGCAGCGCTTACGGAAACTGCA
TGCTGTTGTAGAAACTCTAGTCAACCATAGGAAAGAGCTAGCGCTGAACACAGCCCAGTTTGCAAAGAGT
CTAGCCATGCTTGGGAGCTCTGAGGACAACACGGCATTGTCACGGGCACTCTCCCAGCTGGCTGAGGTGG
AAGAAAAAATTGAGCAGCTCCACCAGGAACAGGCCAACAATGACTTCTTCCTCCTTGCTGAGCTCCTGAG
TGACTACATTCGCCTCCTGGCCATAGTCCGCGCTGCCTTCGACCAGCGCATGAAGACATGGCAGCGCTGG

Figure 36 part - 85

CAGGATGCCCAAGCCACACTGCAGAAGAAGCGGGAGGCCGAGGCTCGGCTGCTGTGGGCCAACAAGCCTG
ATAAGCTGCAGCAGGCCAAGGACGAGATCCTCGAGTGGGAGTCTCGGGTGACTCAATATGAAAGGGACTT
CGAGAGGATTTCAACAGTGGTCCGAAAAGAAGTGATACGGTTTGAGAAAGAGAAATCCAAGGACTTCAAG
AACCACGTGATCAAGTACCTTGAGACACTCCTTTACTCACAGCAGCAGCTGGCAAAGTACTGGGAAGCCT
TCCTTCCTGAGGCAAAGGCCATCTCCTAG

Human SNX1 mRNA sequence - var4 (public gi: 4884359) (SEQ ID NO: 155)

GGTTGCTTTGTTAAGTTCCATCTAATGATCATTCTGACGTAAGTCTGTTTTTCTTATTTCCTTGGAATGA
TGTCTCCTCTGGTTTCAGAACTTCCTCCTCTGCTTCCTGTATCCTGAGGCTGGCGGGGCCAGTTGTCTTT
AGGGCTTGTGCATTTTTGTAAAGAGCTTGCACGTGTGGAAATCAAGTAGGCCAGTAGTGGGTTAGGGGTA
CTGAGCCAGAAGCCTCTACAAGGAATAACAGGAGCACAAAGGAAGAAGGTGGTATTCCAGCTGGGGACCC
AGGAGGGAGGACTTTGTGGAGAACCTGATGCTTGAACTGAGTCTAAAAGGTGTAAAAGTGTTTGTTGCTT
CTGCCTCCCTGTCTGTCTGGCAGGGTGAGGTAGGCGCATCTAGGGAAATGTCAAGTGGCTTGGTGTAGGG
TAAAGTCAGTGAGGCCCATGGAGAAAAACGAGCAGGAGCCACATCACATGGGTGTCTGATAGGACCTGGG
AGGCGCTTTCCACATTACCATTGTCGCTTCGTGATCTGGACACACCAGAAGGCGTGAGACTGGAGGCAGG
AAGAGCAGCCAGGCTTATCCCTACCCTCAGGAGAGCTGAAAAGGGCAGGTATGGTGGGGCCAGAGCTCAG
GAGAGTTTCGGAACCACTGAGATCGGTCCTTGATTTGATGAGAGGCTTGAGGGGAGAGGGAGGTAGCTAG
GATGCCCCGCAAGCTTCTGGCCCAGACACTGGGCAGACAATGAAACCCTTTGTAACACATGAGGCAATAG
GTTTGGGGCAGATGGGAGGGGAAGCAGTGGTGGGGGCAGTGAGTGCTGAAGGTGTTTTAAGAAGCGGCTC
TGGGCCAGGCACAGTGGCTTATGCCTGTATTCCTAGCATTTTGGGAGGCCGAGGTGGGAGAATCACTTGA
GCCCAAGAATTTGAGACCAGCCTGGGGAATATAGTGAGACCCTGTCCCTACAAAAATAAAAACAACTAGC
TGGGTGTGTGGTGGTGCATGCCTGTAGGCCCAGCTACGCGGGAACATCACCTGAGCCCAGGAGGTTGAGG
TTGCAGTGAGCTACAGTTGCGCCACTGCACTCCAGCCTAGGTGACAGAGCAAGATCTTGTCTCAAAAAAA
AAAACAGCTCTGGATGGGAAGGGAGGCCAGTTGCTTTAAGTAGGGGAGATAGAGTTAAAGGAGGCTTTGT
TTTATTTAAAGGTGGGACAAACTTAAGCATGTTAATAAAATTCAGAGAAGAGAAAGAGAATGACTATCAG
AGCCATGTTTGGAAGAAAATGGGGTCCAGAGCACAGGAAGGGGACCTGTGTTCAGAGGGTGCCTCACTGC
TGAGGCCACAGGAAAGAATCTGTAGGTGGAGGGGAGGCCGAAGAGGGGAAGTTTCATGCTTGATAATTAA
AATTTTCTGAGATAGGAATGTCATATTTACCTATTTAAGCCAAGTTTTTTTAGATAAAAGGTATGGAACC
TGCTTTCCCCTTGGCTAGTTCAGCGTTTGGGCTCCGGAGTGCTGAAGATGAGGACTGGACTTCGAGCTGG
TGTGATCCCAGTATTCAGTGTCAGTACTCAGTGACAAAATAAATGAGAGAAACGGGAATAAGAATTGTCG
CCTACACAAAAATACCAGCAACTGTTAACTCTTCCCAGAAGATTTTCATTCTGAATGCTCCTGTAGCTAG
GAACCCTAAAAAGTCTTTGAAGCAACTCAAGTTTTAAAAAAGGGGAGGAACTCCTGGAAATCTCAGGATG
GGGCCAAGATGTGGCTGGAGAGTGTGTGGTGATGGAGGGCGTGTCTTTTGCCGAGCACACTCAGGGCCCA
CGGGAAGCCCATAGACTTCAAGGACATCAAGCCCCAAGGTGGTGGGATTTTCCCCACCAGTACTTGGCAG
CCTAGGGGGAAGGGGAGGGCGGGAGAAGATAATGGGGATCCCTGGCTCCAAACATAGGAGGACACATCTG
TGCTACAGTGCGCACATGCCTGGATGTACACTCTGTCTTTGGAGACACTGGCTAAGATTCTCTGCTCCAT
GTTTGGACAGGGTCGTGCCTGATCTGAGATAAATGGACAAGAACAACTGAAGCCTGTCTTCTGGTGCATG
TGTCACCTGCCGATAACTGCATCTTGTGATAAAGTTGGGTGATTTACAGTCTCCACCAAATGCTAAACTC
TGGGGTCTTACGCCTTTATAACTCCATGGGCCCCAGCAAAGGTTCAGGCTCAAAACAGGTGTCAAATAGA
TAACTGTTGAATGATTGTTCCCCAGTTGCAGGCTCTGCCACCTGGCGTTCATACTGTCTGTGAAAGGACC
CAGCTCACCTTTCCCTCTTTATCTCCCAGTCCTTCCCAACAGCGCCGACACCTCATGGAAACTGATTGCA
AATGTGCTACTTCTCACTTCTGTGTGGCCCGAGGAGGCTGGGTTAATGCTGGGCTTGGTACCTTAAGCAC
CCTTTCTCCCTTCCCCATCTTCATTCTCAGAATTACACCTGTCTGAAGCAGGCATTTTCCAATGCCCTAG
ATGGGAATATAAGTGTAAGGAGATGTGAAGCATTTGCCTGTGTGTCAGAACATTCACTGAGGATCCTCAT
AGGCACTTCTAGAAACCAAATCCTTGAAGATGACTAACCAGAAATGCCCGTCATAGCACTGTTTACAGTT
GCAAAAACTGAAGCCAATTGAAATGTCCATCAGGAGGGGATTAAATGAATTATGGTACAGTTACACCGTT
GAATATTTTACAGCCATTGAAGATGATATATAGCTATATTCATTGACAAGGAAAACTCATATTTTTTAGT
GAAAAAAGCAGGTTATAGAATTGCATGATATTCACATTTATATAAAACTTTATATATGGGAAGGATGTTG
ATTGAATTGTTAATAACTATGGTCACCTCTAGAGATGGAAGTTTGCATTACCTTTAATTTTTAATACCAT
TTTGTATTGCTTAAAATTTGTATGTATTATCGTTAAAATAAGAAAAATCAAATAAAGCTATTTTCATTAT
GGGAAAAAAAAAAAAAAAAA

Human SNX1 mRNA sequence - var5 (public gi: 4406620) (SEQ ID NO: 156)

ATAAAAGGTATGGAACCTGCTTTCCCCTTGGCTAGTTCAGCGTTTGGGCTCCGGAGTGCTGAAGATGAGG
ACTGGACTTCGAGCTGGTGTGATCCCAGTATTCAGTGTCAGTACTCAGTGACAAAATAAATGAGAGAAAC
GGGAATAAGAATTGTCGCCTACACAAAAATACCAGCAACTGTTAACTCTTCCCAGAAGATTTTCATTCTG
AATGCTCCTGTAGCTAGGAACCCTAAAAAGTCTTTGAAGCAACTCAAGTTTTAAAAAAGGGGAGGAACTC
CTGGAAATCTCAGGATGGGGCCAAGATGTGGCTGGAGAGTGTGTGGTGATGGAGGGCGTGTCTTTTGCCG
AGCACACTCAGGGCCCACGGGAAGCCCATAGACTTCAAGGACATCAAGCCCCAAGGTGGTGGGATTTTCC
CCACCAGTACTTGGCAGCCTAGGGGGAAGGGGAGGGCGGGAGAAGATAATGGGGATCCCTGGCTCCAAAC
ATAGGAGGACACATCTGTGCTACAGTGCGCACATGCCTGGATGTACACTCTGTCTTTGGAGACACTGGCT
AAGATTCTCTGCTCCATGTTTGGACAGGGTCGTGCCTGATCTGAGATAAATGGACAAGAACAACTGAAGC

Figure 36 part - 86

CTGTCTTCTGGTGCATGTGTCACCTGCCGATAACTGCATCTTGTGATAAAGTTGGGTGATTTACAGTCTC
CACCAAATGCTAAACTCTGGGGTCTTACGCCTTTATAACTCCATGGGCCCCAGCAAAGGTTCAGGCTCAA
AACAGGTGTCAAATAGATAACTGTTGAATGATTGTTCCCCAGTTGCAGGCTCTGCCACCTGGCGTTCATA
CTGTCTGTGAAAGGACCCAGCTCACCTTTCCCTCTTTATCTCCCAGTCCTTCCCAACAGCGCCGACACCT
CATGGAAACTGATTGCAAATGTGCTACTTCTCACTTCTGTGTGGCCCGAGGAGGCTGGGTTAATGCTGGG
CTTGGTACCTTAAGCACCCTTTCTCCCTTCCCCATCTTCATTCTCAGAATTACACCTGTCTGAAGCAGGC
ATTTTCCAATGCCCTAGATGGGAATATAAGTGTAAGGAGATGTGAAGCATTTGCCTGTGTGTCAGAACAT
TCACTGAGGATCCTCATAGGCACTTCTAGAAACCAAATCCTTGAAGATGACTAACCAGAAATGCCCGTCA
TAGCACTGTTTACAGTTGCAAAAACTGAAGCCAATTGAAATGTCCATCAGGAGGGGATTAAATGAATTAT
GGTACAGTTACACCGTTGAATATTTTACAGCCATTGAAGATGATATATAGCTATATTCATTGACAAGGAA
AACTCATATTTTTTAGTGAAAAAAGCAGGTTATAGAATTGCATGATATTCACATTTATATAAAACTTTAT
ATATGGGAAGGATGTTGATTGAATTGTTAATAACTATGGTCACCTCTAGAGATGGAAGTTTGCATTACCT
TTAATTTTTAATACCATTTTGTATTGCTTAAAATTTGTATGTATTATCGTTAAAATAAGAAAAATCAAAT
AAAGCTATTTTCATTATGGGAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

Human SNX1 mRNA sequence - var6 (public gi: 34535422) (SEQ ID NO: 157)

TTTCCGCCGCGGGTGGAAGAAGATGGCGTCGGGTGGTGGTGGCTGTAGCGCTTCGGAGAGACTGCCTCCG
CCCTTCCCCGGCCTGGAGCCGGAGTCCGAGGGGGCGGCCGGGGGATCAGAACCCGAGGCTGGGGACAGCG
ACACCGAGGGGGAGGACATTTTCACCGGCGCCGCGGTGGTCAGTAAACATCAGTCTCCAAAGATAACTAC
ATCCCTTCTTCCCATCAACAATGGCTCCAAAGAAAATGGGATCCATGAAGAACAAGACCAAGAGCCACAG
GATCTCTTTGCAGATGCCACAGTGGAGCTATCCTTGGACAGCACACAAAATAATCAGAAGAAGGTGCTAG
CCAAAACACTCATTTCTCTTCCTCCTCAGGAAGCCACAAATTCTTCGAAGCCCCAGCCAACCTATGAGGA
GCTAGAGGAAGAAGAACAGGAGGATCAATTTGATTTGACAGTCGGTATAACTGATCCTGAGAAGATAGGG
GATGGTATGAATGCATATGTAGCCTACAAAGTTACAACACAGACAAGCTTACCATTGTTCAGAAGCAAAC
AGTTTGCAGTAAAAAGAAGATTTAGTGACTTTCTGGGTCTTTATGAGAAGCTTTCCGAGAAGCACTCTCA
GAATGGCTTCATTGTCCCTCCACCCCCGGAGAAGAGCCTCATAGGGATGACAAAAGTGAAAGTTGGGAAG
GAAGATTCTTCTTCTGCAGAATTTCTTGAAAAACGGAGGGCCGCTTTAGAAAGGTACCTTCAGAGGATTG
TAAATCATCCTACCATGTTACAGGACCCTGACGTCAGAGAGTTCTTGGAAAAAGAAGAGCTGCCACGTGC
CGTGGGTACCCAGACATTGAGTGGTGCTGGTCTCCTCAAGATGTTCAACAAAGCCACAGATGCCGTCAGC
AAAATGACCATCAAGATGAATGAATCAGACATTTGGTTTGAGGAGAAGCTCCAGGAGGTAGAGTGTGAGG
AGCAGCGCTTACGGAAACTGCATGCTGTTGTAGAAACTCTAGTCAACCATAGGAAAGAGCTAGCGCTGAA
CACAGCCCAGTTTGCAAAGAGTCTAGCCATGCTTGGGAGCTCTGAGGACAACACGGCATTGTCACGGGCA
CTCTCCCAGCTGGCTGAGGTGGAAGAAAAAATTGAGCAGCTCCACCAGGAACAGGCCAACAATGACTTCT
TCCTCCTTGCTGAGCTCCTGAGTGACTACATTCGCCTCCTGGCCATAGTCCGCGCTGCCTTCGACCAGCG
CATGAAGACATGGCAGCGCTGGCAGGATGCCCAAGCCACACTGCAGAAGAAGCGGGAGGCCGAGGCTCGG
CTGCTGTGGGCCAACAAGCCTGATAAGCTGCAGCAGGCCAAGGACGAGATCCTCGAGTGGGAGTCTCGGG
TGACTCAATATGAAAGGGACTTCGAGAGGATTTCAACAGTGGTCCGAAAAGAAGTGATACGGTTTGAGAA
AGAGAAATCCAAGGACTTCAAGAACCACGTGATCAAGTACCTTGAGACACTCCTTTGCTCACAGCAGCAG
GCTGGGGAGCAGTTGGGAATCAGGTCTGGAATACTCCTAACCAAGAAGTTGCCCAGGTATAGTAAGTTTT
TCTCTACCGTTCACAAGTTTTGTGCTGCTGCTTCCCTCTGGAAATGGGGTTTCTTTCTCTCCGCCTACCT
CAGCTACCTGTTCTGAGGGTCTCAATCTGTTTCGTATTCCCACTTCTTTAGGGAAGGAGTTTTAAAAACA
TCTCTTAAAATAAGAGGAGCAAAATCTATTAAAACCTATTCTCCTGCAAAGGAGGCAGAGACTTTCTCTC
TCTCTTTTTTTTTTTTTTTTGGTGTCCCTATCATTAAGCAAGAGCCTTTCTCTTTTATTCTTCCTGCTT
CCCTAAGCTGCTCAGGGCTCTCTGAGTCTTGCCCTCTGATGGCAAGTCTTATATATAACTAAACCTATTT
TTGTCACCCATCAAAACACATCCTCAGTAGACTGTGTGAAGGTGTGAAGGTCTGATAATGACTTGATGCT
TTATCTCCATAGACATGAAAGCCATGCCCTCTGCCTCTAGATAGGGTGATCCAAGAGCTCCTGAACCTTA
GGAGGTTCAAAGAAGCTCTACTGTCTGTGCCCAGGAGGTAGCCTGCCAGCAAGAGCCCTCAGGAGTTGCA
CACACAGCCAAAGGGTGTTCACACAGATCTCTGCCGGTCTAGCCAGGGGAGGCCAGAGTCTCGTCAGTCA
AGGATGGGCTTCCCCCTTAGCTGTGTCCACAGCTGCTCAAGCTATACTGGTCAGAGTGGGCTTTGAAGCT
CCTTTGTGAGCTCGAGCTGCTGACTGCCACTATGGGAGCCTTGCCACCTCCAGCCCCTCCATCCCAAAGA
CGCTCCTGCCACTGGGGCCCCAGGTCCTGCTGTATCAGTTCTCTTTGGTGGGGGGCTAAGGTTTGGGGCG
AGGCAACCTGAGACAAGAAAACGCAGTAAACATTCTGATTCCCTGTACACAGATGCAGCACCAGGGGAAG
GGCCAGTGGTGCAAGTATTTCTTTTTAACAGGTGAAGTTTTTGGAAAAAGTCACTCTCCCTACCCCTCAG
TATCCTTACCATCAACTTTGGTTTTATCCTTCCAGTCTTTATTATATGCTTGCTTTTACATAGTTGTAAT
AATATACACATAAAGTATTTTGTATCCTGCTTTTATCATTCAACATTGTACATGTTATAAGCATTTTACT
ATATTGTTATATATCTTCACAAAGTTGATCTGTAAAGCTGTGTAATTTGAAGGCATCCATAGGGTGACTG
TACCATAATTTTGATTCATCCCTTGTTGTTGGATTCTTGGTCAGGGGTTGTTTGTTTTGTTTTATTGGTA
ACTTTAAAATTTTGAATACAATTTCAGATTTACAGAAAAGTTGCAGGAATATCACAAAGAACTCCTATAT
ATCTTTTATCCAGATTTACTGAGTGTTTACATTTTATCCCATTTGCCTTATCTATATTTCATGTTGCATT
TTCTTAATCATTTGAGAATAATTTGCACAGATACCCCATTATGCCCAAAACAGTATGCATTTCCCTAAGA
ACAGGACATTCTCTTCTAAGAGAAGAAGAGAATTACTTTAAGCATTATTCAGTATTTTTTTAAGTATTAT
TATCAAAATCAGGAAGTTTAACAGTGATTTAATACTGTTATCTAACCCATGATTCATATTTAAATTTTGC
CATTTATCCCAATAATGTCCTTTGTAGCCATTCTTTTACCTTGTGCAGGATCATGTTACATTTGTAAACG

Figure 36 part - 87

TGTGTCTCTCAATACTGCAGATTCCTCAACTTTCTTTTGTCTTTCATTACCATGACATTTTTGAAGAATA
CAGGCTATTTTGTCG

Human SNX1 mRNA sequence - var7 (public gi: 38197125) (SEQ ID NO: 158)
GTGGAAGAAGATGGCGTCGGGTGGTGGTGGCTGTAGCGCTTCGGAGAGACTGCCTCCGCCCTTCCCCGGC
CTGGAGCCGGAGTCCGAGGGGGCGGCCGGGGGATCAGAACCCGAGGCTGGGGACAGCGACACCGAGGGGG
AGGACATTTTCACCGGCGCCGCGGTGGTCAGTAAACATCAGTCTCCAAAGATAACTACATCCCTTCTTCC
CATCAACAATGGCTCCAAAGAAAATGGGATCCATGAAGAACAAGACCAAGAGCCACAGGATCTCTTTGCA
GATGCCACAGTGGAGCTATCCTTGGACAGCACACAAAATAATCAGAAGAAGGTGCTAGCCAAAACACTCA
TTTCTCTTCCTCCTCAGGAAGCCACAAATTCTTCGAAGCCCCAGCCAACCTATGAGGAGCTAGAGGAAGA
AGAACAGGAGGATCAATTTGATTTGACAGTCGGTATAACTGATCCTGAGAAGATAGGGGATGGTATGAAT
GCATATGTAGCCTACAAAGTTACAACACAGACAAGCTTACCATTGTTCAGAAGCAAACAGTTTGCAGTAA
AAAGAAGATTTAGTGACTTTCTGGGTCTTTATGAGAAGCTTTCCGAGAAGCACTCTCAGAATGGCTTCAT
TGTCCCTCCACCCCCGGAGAAGAGCCTCATAGGGATGACAAAAGTGAAAGTTGGGAAGGAAGATTCTTCT
TCTGCAGAATTTCTTGAAAAACGGAGGGCCGCTTTAGAAAGGTACCTTCAGAGGATTGTAAATCATCCTA
CCATGTTACAGGACCCTGACGTCAGAGAGTTCTTGGAAAAAGAAGAGCTGCCACGTGCCGTGGGTACCCA
GACATTGAGTGGTGCTGGTCTCCTCAAGATGTTCAACAAAGCCACAGATGCCGTCAGCAAAATGACCATC
AAGATGAATGAATCAGACATTTGGTTTGAGGAGAAGCTCCAGGAGGTAGAGTGTGAGGAGCAGCGCTTAC
GGAAACTGCATGCTGTTGTAGAAACTCTAGTCAACCATAGGAAAGAGCTAGCGCTGAACACAGCCCAGTT
TGCAAAGAGTCTAGCCATGCTTGGGAGCTCTGAGGACAACACGGCATTGTCACGGGCACTCTCCCAGCTG
GCTGAGGTGGAAGAAAAAATTGAGCAGCTCCACCAGGAACAGGCCAACAATGACTTCTTCCTCCTTGCTG
AGCTCCTGAGTGACTACATTCGCCTCCTGGCCATAGTCCGCGCTGCCTTCGACCAGCGCATGAAGACATG
GCAGCGCTGGCAGGATGCCCAAGCCACACTGCAGAAGAAGCGGGAGGCCGAGGCTCGGCTGCTGTGGGCC
AACAAGCCTGATAAGCTGCAGCAGGCCAAGGACGAGATCCTCGAGTGGGAGTCTCGGGTGACTCAATATG
AAAGGGACTTCGAGAGGATTTCAACAGTGGTCCGAAAAGAAGTGATACGGTTTGAGAAAGAGAAATCCAA
GGACTTCAAGAACCACGTGATCAAGTACCTTGAGACACTCCTTTACTCACAGCAGCAGCTGGCAAAGTAC
TGGGAAGCCTTCCTTCCTGAGGCAAAGGCCATCTCCTAATGGACCAAGGACCCCAGAGCCCACCTGTGTG
ACGCTGCCTTTTTATACACTGTCCTCCTCCACCTTGATGGACCCCTAGTGATGCATCCTGCCTAGGCTGG
ACTTAACCCCTTCCTCCCTGTCCCCACGACCAACTGTCCCCAGTTACTCTAACCGTTATTTCATTTAGCT
TCCATATATATTTTCTTACCTAAGAGAATAGTTTCCTGCTTTAAGCAAAAGACCTACAATAGGTGGTGGA
ATTATGGGATGGGGTGGAGTATTGATATAAATATATAAATACAAATGTATATTTTTCAGGATGTGGTTTA
GGAACTGGGAATAACGTTTTCTGTTACTCCTGATGGTGCCATGAAAAGGTTATGTAATAAAATATTTTAA
AATCAAAAAAAAAAAAAAAAAA

Human SNX1 mRNA sequence - var8 (public gi: 23111033) (SEQ ID NO: 159)
GGGTGGAAGAAGATGGCGTCGGGTGGTGGTGGCTGTAGCGCTTCGGAGAGACTGCCTCCGCCCTTCCCCG
GCCTGGAGCCGGAGTCCGAGGGGGCGGCCGGGGGATCAGAACCCGAGGCTGGGGACAGCGACACCGAGGG
GGAGGACATTTTCACCGGCGCCGCGGTGGTCAGTAAACATCAGTCTCCAAAGATAACTACATCCCTTCTT
CCCATCAACAATGGCTCCAAAGAAAATGGGATCCATGAAGAACAAGACCAAGAGCCACAGGATCTCTTTG
CAGATGCCACAGTGGAGCTATCCTTGGACAGCACACAAAATAATCAGAAGAAGGTGCTAGCCAAAACACT
CATTTCTCTTCCTCCTCAGGAAGCCACAAATTCTTCGAAGCCCCAGCCAACCTATGAGGAGCTAGAGGAA
GAAGAACAGGAGGATCAATTTGATTTGACAGTCGGTATAACTGATCCTGAGAAGATAGGGGATGGTATGA
ATGCATATGTAGCCTACAAAGTTACAACACAGACAAGCTTACCATTGTTCAGAAGCAAACAGTTTGCAGT
AAAAAGAAGATTTAGTGACTTTCTGGGTCTTTATGAGAAGCTTTCCGAGAAGCACTCTCAGAATGGCTTC
ATTGTCCCTCCGCCCCCGGAGAAGAGCCTCATAGGGATGACAAAAGTGAAAGTTGGGAAGGAAGATTCTT
CTTCTGCAGAATTTCTTGAAAAACGGAGGGCCGCTTTAGAAAGGTACCTTCAGAGGATTGTAAATCATCC
TACCATGTTACAGGACCCTGACGTCAGAGAGTTCTTGGAAAAAGAAGAGCTGCCACGTGCCGTGGGTACC
CAGACATTGAGTGGTGCTGGTCTCCTCAAGATGTTCAACAAAGCCACAGATGCCGTCAGCAAAATGACCA
TCAAGATGAATGAATCAGACATTTGGTTTGAGGAGAAGCTCCAGGAGGTAGAGTGTGAGGAGCAGCGCTT
ACGGAAACTGCATGCTGTTGTAGAAACTCTAGTCAACCATAGGAAAGAGCTAGCGCTGAACACAGCCCAG
TTTGCAAAGAGTCTAGCCATGCTTGGGAGCTCTGAGGACAACACGGCATTGTCACGGGCACTCTCCCAGC
TGGCTGAGGTGGAAGAAAAAATTGAGCAGCTCCACCAGGAACAGGCCAACAATGACTTCTTCCTCCTTGC
TGAGCTCCTGAGTGACTACATTCGCCTCCTGGCCATAGTCCGCGCTGCCTTCGACCAGCGCATGAAGACA
TGGCAGCGCTGGCAGGATGCCCAAGCCACACTGCAGAAGAAGCGGGAGGCCGAGGCTCGGCTGCTGTGGG
CCAACAAGCCTGATAAGCTGCAGCAGGCCAAGGACGAGATCCTCGAGTGGGAGTCTCGGGTGACTCAATA
TGAAAGGGACTTCGAGAGGATTTCAACAGTGGTCCGAAAAGAAGTGATACGGTTTGAGAAAGAGAAATCC
AAGGACTTCAAGAACCACGTGATCAAGTACCTTGAGACACTCCTTTACTCACAGCAGCAGCTGGCAAAGT
ACTGGGAAGCCTTCCTTCCTGAGGCAAAGGCCATCTCCTAATGGACCAAGGACCCCAGAGCCCACCTGTG
TGACGCTGCCTTTTTATACACTGTCCTCCTCCACCTTGATGGACCCCTAGTGATGCATCCTGCCTAGGCT
GGACTTAACCCCTTCCTCCCTGTCCCCACGACCAACTGTCCCCAGTTACTCTAACCGTTATTTCATTTAG
CTTCCATATATATTTTCTTACCTAAGAGAATAGTTTCCTGCTTTAAGCAAAAGACCTACAATAGGTGGTG
GAATTATGGGATGGGGTGGAGTATTGATATAAATATATAAATACAAATGTATATTTTTCAGGATGTGGTT

Figure 36 part - 88

TAGGAACTGGGAATAACGTTTTCTGTTACTCCTGATGGTGCCATGAAAAGGTTATGTAATAAAATATTTT
AAAATCAAAAAAAAAAAAAAAAAA

Human SNX1 mRNA sequence - var9 (public gi: 23111035) (SEQ ID NO: 160)
GGGTGGAAGAAGATGGCGTCGGGTGGTGGTGGCTGTAGCGCTTCGGAGAGACTGCCTCCGCCCTTCCCCG
GCCTGGAGCCGGAGTCCGAGGGGGCGGCCGGGGGATCAGAACCCGAGGCTGGGGACAGCGACACCGAGGG
GGAGGACATTTTCACCGGCGCCGCGGTGGTCAGTAAACATCAGTCTCCAAAGATAACTACATCCCTTCTT
CCCATCAACAATGGCTCCAAAGAAAATGGGATCCATGAAGAACAAGACCAAGAGCCACAGGATCTCTTTG
CAGATGCCACAGTGGAGCTATCCTTGGACAGCACACAAAATAATCAGAAGAAGGTGCTAGCCAAAACACT
CATTTCTCTTCCTCCTCAGGAAGCCACAAATTCTTCGAAGCCCCAGCCAACCTATGAGGAGCTAGAGGAA
GAAGAACAGGAGGATCAATTTGATTTGACAGTCGGTATAACTGATCCTGAGAAGATAGGGGATGGTATGA
ATGCATATGTAGCCTACAAAGTTACAACACAGACAAGCTTACCATTGTTCAGAAGCAAACAGTTTGCAGT
AAAAAGAAGATTTAGTGACTTTCTGGGTCTTTATGAGAAGCTTTCCGAGAAGCACTCTCAGAATGGCTTC
ATTGTCCCTCCGCCCCCGGAGAAGAGCCTCATAGGGATGACAAAAGTGAAAGTTGGGAAGGAAGATTCTT
CTTCTGCAGAATTTCTTGAAAAACGGAGGGCCGCTTTAGAAAGGTACCTTCAGAGGATTGTAAATCATCC
TACCATGTTACAGGACCCTGACGTCAGAGAGTTCTTGGAAAAAGAAGAGCTGCCACGTGCCGTGGGTACC
CAGACATTGAGTGGTGCTGGTCTCCTCAAGATGTTCAACAAAGCCACAGATGCCGTCAGCAAAATGACCA
TCAAGATGAATGAATCAGACATTTGGTTTGAGGAGAAGCTCCAGGAGGTAGAGTGTGAGGAGCAGCGCTT
ACGGAAACTGCATGCTGTTGTAGAAACTCTAGTCAACCATAGGAAAGAGCTAGCGCTGAACACAGCCCAG
TTTGCAAAGAGTCTAGCCATGCTTGGGAGCTCTGAGGACAACACGGCATTGTCACGGGCACTCTCCCAGC
TGGCTGAGGTGGAAGAAAAAATTGAGCAGCTCCACCAGGAACAGGCCAACAATGACTTCTTCCTCCTTGC
TGAGCTCCTGAGTGACTACATTCGCCTCCTGGCCATAGTCCGCTGGGAGTCTCGGGTGACTCAATATGAA
AGGGACTTCGAGAGGATTTCAACAGTGGTCCGAAAAGAAGTGATACGGTTTGAGAAAGAGAAATCCAAGG
ACTTCAAGAACCACGTGATCAAGTACCTTGAGACACTCCTTTACTCACAGCAGCAGCTGGCAAAGTACTG
GGAAGCCTTCCTTCCTGAGGCAAAGGCCATCTCCTAATGGACCAAGGACCCCAGAGCCCACCTGTGTGAC
GCTGCCTTTTTATACACTGTCCTCCTCCACCTTGATGGACCCCTAGTGATGCATCCTGCCTAGGCTGGAC
TTAACCCCTTCCTCCCTGTCCCCACGACCAACTGTCCCCAGTTACTCTAACCGTTATTTCATTTAGCTTC
CATATATATTTTCTTACCTAAGAGAATAGTTTCCTGCTTTAAGCAAAAGACCTACAATAGGTGGTGGAAT
TATGGGATGGGGTGGAGTATTGATATAAATATATAAATACAAATGTATATTTTTCAGGATGTGGTTTAGG
AACTGGGAATAACGTTTTCTGTTACTCCTGATGGTGCCATGAAAAGGTTATGTAATAAAATATTTTAAAA
TCAAAAAAAAAAAAAAAAAA

Human SNX1 mRNA sequence - var10 (public gi: 23111031) (SEQ ID NO: 161)
GGGTGGAAGAAGATGGCGTCGGGTGGTGGTGGCTGTAGCGCTTCGGAGAGACTGCCTCCGCCCTTCCCCG
GCCTGGAGCCGGAGTCCGAGGGGGCGGCCGGGGGATCAGAACCCGAGGCTGGGGACAGCGACACCGAGGG
GGAGGACATTTTCACCGGCGCCGCGGTGGTCAGTAAACATCAGTCTCCAAAGATAACTACATCCCTTCTT
CCCATCAACAATGGCTCCAAAGAAAATGGGATCCATGAAGAACAAGACCAAGAGCCACAGGATCTCTTTG
CAGGGGATGGTATGAATGCATATGTAGCCTACAAAGTTACAACACAGACAAGCTTACCATTGTTCAGAAG
CAAACAGTTTGCAGTAAAAAGAAGATTTAGTGACTTTCTGGGTCTTTATGAGAAGCTTTCCGAGAAGCAC
TCTCAGAATGGCTTCATTGTCCCTCCGCCCCCGGAGAAGAGCCTCATAGGGATGACAAAAGTGAAAGTTG
GGAAGGAAGATTCTTCTTCTGCAGAATTTCTTGAAAAACGGAGGGCCGCTTTAGAAAGGTACCTTCAGAG
GATTGTAAATCATCCTACCATGTTACAGGACCCTGACGTCAGAGAGTTCTTGGAAAAAGAAGAGCTGCCA
CGTGCCGTGGGTACCCAGACATTGAGTGGTGCTGGTCTCCTCAAGATGTTCAACAAAGCCACAGATGCCG
TCAGCAAAATGACCATCAAGATGAATGAATCAGACATTTGGTTTGAGGAGAAGCTCCAGGAGGTAGAGTG
TGAGGAGCAGCGCTTACGGAAACTGCATGCTGTTGTAGAAACTCTAGTCAACCATAGGAAAGAGCTAGCG
CTGAACACAGCCCAGTTTGCAAAGAGTCTAGCCATGCTTGGGAGCTCTGAGGACAACACGGCATTGTCAC
GGGCACTCTCCCAGCTGGCTGAGGTGGAAGAAAAAATTGAGCAGCTCCACCAGGAACAGGCCAACAATGA
CTTCTTCCTCCTTGCTGAGCTCCTGAGTGACTACATTCGCCTCCTGGCCATAGTCCGCGCTGCCTTCGAC
CAGCGCATGAAGACATGGCAGCGCTGGCAGGATGCCCAAGCCACACTGCAGAAGAAGCGGGAGGCCGAGG
CTCGGCTGCTGTGGGCCAACAAGCCTGATAAGCTGCAGCAGGCCAAGGACGAGATCCTCGAGTGGGAGTC
TCGGGTGACTCAATATGAAAGGGACTTCGAGAGGATTTCAACAGTGGTCCGAAAAGAAGTGATACGGTTT
GAGAAAGAGAAATCCAAGGACTTCAAGAACCACGTGATCAAGTACCTTGAGACACTCCTTTACTCACAGC
AGCAGCTGGCAAAGTACTGGGAAGCCTTCCTTCCTGAGGCAAAGGCCATCTCCTAATGGACCAAGGACCC
CAGAGCCCACCTGTGTGACGCTGCCTTTTTATACACTGTCCTCCTCCACCTTGATGGACCCCTAGTGATG
CATCCTGCCTAGGCTGGACTTAACCCCTTCCTCCCTGTCCCCACGACCAACTGTCCCCAGTTACTCTAAC
CGTTATTTCATTTAGCTTCCATATATATTTTCTTACCTAAGAGAATAGTTTCCTGCTTTAAGCAAAAGAC
CTACAATAGGTGGTGGAATTATGGGATGGGGTGGAGTATTGATATAAATATATAAATACAAATGTATATT
TTTCAGGATGTGGTTTAGGAACTGGGAATAACGTTTTCTGTTACTCCTGATGGTGCCATGAAAAGGTTAT
GTAATAAAATATTTTAAAATCAAAAAAAAAAAAAAAAAA

Human SNX1 protein sequence - var1 (public gi: 23111032) (SEQ ID NO: 281)

Figure 36 part - 89

MASGGGGCSASERLPPPFPGLEPESEGAAGGSEPEAGDSDTEGEDIFTGAAVVSKHQSPKITTSLLPINN
GSKENGIHEEQDQEPQDLFAGDGMNAYVAYKVTTQTSLPLFRSKQFAVKRRFSDFLGLYEKLSEKHSQNG
FIVPPPPEKSLIGMTKVKVGKEDSSSAEFLEKRRAALERYLQRIVNHPTMLQDPDVREFLEKEELPRAVG
TQTLSGAGLLKMFNKATDAVSKMTIKMNESDIWFEEKLQEVECEEQRLRKLHAVVETLVNHRKELALNTA
QFAKSLAMLGSSEDNTALSRALSQLAEVEEKIEQLHQEQANNDFFLLAELLSDYIRLLAIVRAAFDQRMK
TWQRWQDAQATLQKKREAEARLLWANKPDKLQQAKDEILEWESRVTQYERDFERISTVVRKEVIRFEKEK
SKDFKNHVIKYLETLLYSQQQLAKYWEAFLPEAKAIS

Human SNX1 protein sequence - var2 (public gi: 23111036) (SEQ ID NO: 282)
MASGGGGCSASERLPPPFPGLEPESEGAAGGSEPEAGDSDTEGEDIFTGAAVVSKHQSPKITTSLLPINN
GSKENGIHEEQDQEPQDLFADATVELSLDSTQNNQKKVLAKTLISLPPQEATNSSKPQPTYEELEEEEQE
DQFDLTVGITDPEKIGDGMNAYVAYKVTTQTSLPLFRSKQFAVKRRFSDFLGLYEKLSEKHSQNGFIVPP
PPEKSLIGMTKVKVGKEDSSSAEFLEKRRAALERYLQRIVNHPTMLQDPDVREFLEKEELPRAVGTQTLS
GAGLLKMFNKATDAVSKMTIKMNESDIWFEEKLQEVECEEQRLRKLHAVVETLVNHRKELALNTAQFAKS
LAMLGSSEDNTALSRALSQLAEVEEKIEQLHQEQANNDFFLLAELLSDYIRLLAIVRWESRVTQYERDFE
RISTVVRKEVIRFEKEKSKDFKNHVIKYLETLLYSQQQLAKYWEAFLPEAKAIS

Human SNX1 protein sequence - var3 (public gi: 12653179) (SEQ ID NO: 283)
MASGGGGCSASERLPPPFPGLEPESEGAAGGSEPEAGDSDTEGEDIFTGAAVVSKHQSPKITTSLLPINN
GSKENGIHEEQDQEPQDLFADATVELSLDSTQNNQKKVLAKTLISLPPQEATNSSKPQPTYEELEEEEQE
DQFDLTVGITDPEKIGDGMNAYVAYKVTTQTSLPLFRSKQFAVKRRFSDFLGLYEKLSEKHSQNGFIVPP
PPEKSLIGMTKVKVGKEDSSSAEFLEKRRAALERYLQRIVNHPTMLQDPDVREFLEKEELPRAVGTQTLS
GAGLLKMFNKATDAVSKMTIKMNESDIWFEEKLQEVECEEQRLRKLHAVVETLVNHRKELALNTAQFAKS
LAMLGSSEDNTALSRALSQLAEVEEKIEQLHQEQANNDFFLLAELLSDYIRLLAIVRAAFDQRMKTWQRW
QDAQATLQKKREAEARLLWANKPDKLQQAKDEILEWESRVTQYERDFERISTVVRKEVIRFEKEKSKDFK
NHVIKYLETLLYSQQQLAKYWEAFLPEAKAIS

Human SNX1 protein sequence - var4 (public gi: 34535423) (SEQ ID NO: 284)
MASGGGGCSASERLPPPFPGLEPESEGAAGGSEPEAGDSDTEGEDIFTGAAVVSKHQSPKITTSLLPINN
GSKENGIHEEQDQEPQDLFADATVELSLDSTQNNQKKVLAKTLISLPPQEATNSSKPQPTYEELEEEEQE
DQFDLTVGITDPEKIGDGMNAYVAYKVTTQTSLPLFRSKQFAVKRRFSDFLGLYEKLSEKHSQNGFIVPP
PPEKSLIGMTKVKVGKEDSSSAEFLEKRRAALERYLQRIVNHPTMLQDPDVREFLEKEELPRAVGTQTLS
GAGLLKMFNKATDAVSKMTIKMNESDIWFEEKLQEVECEEQRLRKLHAVVETLVNHRKELALNTAQFAKS
LAMLGSSEDNTALSRALSQLAEVEEKIEQLHQEQANNDFFLLAELLSDYIRLLAIVRAAFDQRMKTWQRW
QDAQATLQKKREAEARLLWANKPDKLQQAKDEILEWESRVTQYERDFERISTVVRKEVIRFEKEKSKDFK
NHVIKYLETLLCSQQQAGEQLGIRSGILLTKKLPRYSKFFSTVHKFCAAASLWKWGFFLSAYLSYLF

Human SNX1 protein sequence - var5 (public gi: 3152942) (SEQ ID NO: 285)
MASGGGGCSASERLPPPFPGLEPESEGAAGGSEPEAGDSDTEGEDIFTGAAVVSKHQSPKITTSLLPINN
GSKENGIHEEQDQEPQDLFAGDGMNAYVAYKVTTQTSLPLFRSKQFAVKRRFSDFLGLYEKLSEKHSQNG
FIVPPSPEKSLIGMTKVKVGKEDSSSAEFLEKRRAALERYLQRIVNHPTMLQDPDVREFLEKEELPRAVG
TQTLSGAGLLKMFNKATDAVSKMTIKMNESDIWFEEKLQEVECEEQRLRKLHAVVETLVNHRKELALNTA
QFAKSLAMLGSSEDNTALSRALSQLAEVEEKIEQLHQEQANNDFFLLAELLSDYIRLLAIVRAAFDQRMK
TWQRWQDAQATLQKKREAEARLLWANKPDKLQQAKDEILEWESRVTQYERDFERISTVVRKEVIRFEKEK
SKDFKNHVIKYLETLLYSQQQLAKYWEAFLPEAKAIS

Human SNX1 protein sequence - var6 (public gi: 3152940) (SEQ ID NO: 286)
MASGGGGCSASERLPPPFPGLEPESEGAAGGSEPEAGDSDTEGEDIFTGAAVVSKHQSPKITTSLLPINN
GSKENGIHEEQDQEPQDLFADATVELSLDSTQNNQKKVLAKTLISLSPQEATNSSKPQPTYEELEEEEQE
DQFDLTVGITDPEKIGDGMNAYVAYKVTTQTSLPLFRSKQFAVKRRFSDFLGLYEKLSEKHSQNGFIVPP
SPEKSLIGMTKVKVGKEDSSSAEFLEKRRAALERYLQRIVNHPTMLQDPDVREFLEKEELPRAVGTQTLS
GAGLLKMFNKATDAVSKMTIKMNESDIWFEEKLQEVECEEQRLRKLHAVVETLVNHRKELALNTAQFAKS
LAMLGSSEDNTALSRALSQLAEVEEKIEQLHQEQANNDFFLLAELLSDYIRLLAIVRAAFDQRMKTWQRW
QDAQATLQKKREAEARLLWANKPDKLQQAKDEILEWESRVTQYERDFERISTVVRKEVIRFEKEKSKDFK
NHVIKYLETLLYSQQQLAKYWEAFLPEAKAIS

Unigene Name: SNX3 Unigene ID: Hs.12102

Human SNX3 mRNA sequence - var1 (public gi: 23111040) (SEQ ID NO: 162)

Figure 36 part - 90

CTGTTTGCGACCCCGAGTCCCATGACACCGCTTCTCCTCACACCCCAGTCCGCAGTGCCCCTCCCCAGCC
TCGGCCGGGCCTCCCGGGAGCCGGGCGTGGCGTTCCAGCTAGTGAGCCGTTTCTCCCCTGGGCTCGGAGG
CGGAAGCTTGAGGGGCGCGGGGAGGAGCTTCGCGTGCGGGGTGAACGCCCGCTCTACGTGCTCGTTCTCT
TCGCGACCGCTGCGCGCGAGCCCCGTGTCCCCACGGCGGGCAGCAGCGGCGGCGGCGGCGGCTGAACGCG
GAGGGGGCGGAGGGAGCCCGCGGCGGCGGCAGCAGCTACAGCGAAATGGCGGAGACCGTGGCTGACACCC
GGCGGCTGATCACCAAGCCGCAGAACCTGAATGACGCCTACGGACCCCCCAGCAACTTCCTCGAGATCGA
TGTGAGCAACCCGCAAACGGTGGGGGTCGGCCGGGGCCGCTTCACCACTTACGAAATCAGGGTCAAGGTC
GTAGTTCCCCCGCTCCCTGGGAAAGCGTTTTTGCGTCAGCTTCCTTTTAGAGGAGATGATGGAATATTTG
ATGACAATTTTATTGAGGAAAGAAAACAAGGGCTGGAGCAGTTTATAAACAAGGTCGCTGGTCATCCTCT
GGCACAGAACGAACGTTGTCTTCACATGTTTTTACAAGATGAAATAATAGATAAAAGCTATACTCCATCT
AAAATAAGACATGCCTGAAATTTGGCAAGAAGGGGCAAAAACGTGACTATTAATGATTGATAAGCACCAG
TGAAGAAGTTCTAACTTTTAGCATGCTGCACAGAAACTGGTATAACATGCCTTCAGTATACTAACACTCA
TATGCTCAGTTTTGTTTTGTTTTGGCAGTTGACAAGAAGTTAATTTGCTTTAGTAAAAATCCCTCATTCC
AGCCTTTCTATATAAATAGCTCTTTCTTGCTGTTTTAATGTGGTGCACACTATAGCCTCACAAACCTGTT
ATTCCAGTGTAATCTGCAGTGTCGTAACTAAAGTTACTGGCTTGGTCTTATTTGCACAGTTTTTGCGTCT
TGTTTGCTTCTTGCATCTGATTAACTAGAATATTTCTCTTTCCCCCTTTTAATTTGTGATGTCACTTGAC
CCCATTTATGTGTAGGAGCACTACACCATTGGTTTCCAATACTGCACACATAAGATACATACTTGTGTGC
AGAAAGTATCTTCCTCCAGGCTTGTAATACCCTTCACATGGAAGATTAATGAGGGAAATCTTTATATTCT
GTATAAAAACAAAAGCAAATTTATATACTAAAATCATTTGTCTAAAAATTTAAGTTGTTTTCAAATAAAA
ATTAAAATGCATTTCTGATATGCAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

Human SNX3 mRNA sequence - var2 (public gi: 34304375) (SEQ ID NO: 163)
GTCCGGCCGGAACCTGTTTGCGACCCCGAGTCCCATGACACCGCTTCTCCTCACACCCCAGTCCGCAGTG
CCCCTCCCCAGCCTCGGCCGGGCCTCCCGGGAGCCGGGCGTGGCGTTCCAGCTAGTGAGCCGTTTCTCCC
CTGGGCTCGGAGGCGGAAGCTTGAGGGGCGCGGGGAGGAGCTTCGCGTGCGGGGTGAACGCCCGCTCTAC
GTGCTCGTTCTCTTCGCGACCGCTGCGCGCGAGCCCCGTGTCCCCACGGCGGGCAGCAGCGGCGGCGGCG
GCGGCTGAACGCGGAGGGGGCGGAGGGAGCCCGCGGCGGCGGCAGCAGCTACAGCGAAATGGCGGAGACC
GTGGCTGACACCCGGCGGCTGATCACCAAGCCGCAGAACCTGAATGACGCCTACGGACCCCCCAGCAACT
TCCTCGAGATCGATGTGAGCAACCCGCAAACGGTGGGGGTCGGCCGGGGCCGCTTCACCACTTACGAAAT
CAGGGTCAAGACAAATCTTCCTATTTTCAAGCTGAAAGAATCTACTGTTAGAAGAAGATACAGTGACTTT
GAATGGCTGCGAAGTGAATTAGAAAGAGAGAGCAAGCCCTGCCTCAGAATGACATCAGAGGCAAGGAGTC
ATGGAAGGACGTGGTGTGCTCAGAATGATGAAAAGTTATTTTGTGACTAGAAAGTCGTAGTTCCCCCGCT
CCCTGGGAAAGCGTTTTTGCGTCAGCTTCCTTTTAGAGGAGATGATGGAATATTTGATGACAATTTTATT
GAGGAAAGAAAACAAGGGCTGGAGCAGTTTATAAACAAGGTCGCTGGTCATCCTCTGGCACAGAACGAAC
GTTGTCTTCACATGTTTTTACAAGATGAAATAATAGATAAAAGCTATACTCCATCTAAAATAAGACATGC
CTGAAATTTGGCAAGAAGGGGCAAAAACGTGACTATTAATGATTGATAAGCACCAGTGAAGAAGTTCTAA
CTTTTAGCATGCTGCACAGAAACTGGTATAACATGCCTTCAGTATACTAACACTCATATGCTCAGTTTTG
TTTTGTTTTGGCAGTTGACAAGAAGTTAATTTGCTTTAGTAAAAATCCCTCATTCCAGCCTTTCTATATA
AATAGCTCTTTCTTGCTGTTTTAATGTGGTGCACACTATAGCCTCACAAACCTGTTATTCCAGTGTAATC
TGCAGTGTCGTAACTAAAGTTACTGGCTTGGTCTTATTTGCACAGTTTTTGCGTCTTGTTTGCTTCTTGC
ATCTGATTAACTAGAATATTTCTCTTTCCCCCTTTTAATTTGTGATGTCACTTGACCCCATTTATGTGTA
GGAGCACTACACCATTGGTTTCCAATACTGCACACATAAGATACATACTTGTGTGCAGAAAGTATCTTCC
TCCAGGCTTGTAATACCCTTCACATGGAAGATTAATGAGGGAAATCTTTATATTCTGTATAAAAACAAAA
GCAAATTTATATACTAAAATCATTTGTCTAAAAATTTAAGTTGTTTTCAAATAAAAATTAAAATGCATTT
CTGATATGCAAAAAAAAAAAAAAAAAAAAAA

Human SNX3 mRNA sequence - var3 (public gi: 34190889) (SEQ ID NO: 164)
TCGACCCACGCGTCCGCCCACGCGTCCGCTGTTTGCGACCCCGAGTCCCATGACACCGCTTCTCCTCACA
CCCCAGTCCGCAGTGCCCCTCCCCAGCCTCGGCCGGGCCTCCCGGGAGCCGGGCGTGGCGTTCCAGCTAG
TGAGCCGTTTCTCCCCTGGGCTCGGAGGCGGAAGCTTGAGGGGCGCGGGGAGGAGCTTCGCGTGCGGGGT
GAACGCCCGCTCTACGTGCTCGTTCTCTTCGCGACCGCTGCGCGCGAGCCCCGTGTCCCCACGGCGGGCA
GCAGCGGCGGCGGCGGCGGCTGAACGCGGAGGGGGCGGAGGGAGCCCGCGGCGGCGGCAGCAGCTACAGC
GAAATGGCGGAGACCGTGGCTGACACCCGGCGGCTGATCACCAAGCCGCAGAACCTGAATGACGCCTACG
GACCCCCCAGCAACTTCCTCGAGATCGATGTGAGCAACCCGCAAACGGTGGGGGTCGGCCGGGGCCGCTT
CACCACTTACGAAATCAGGGTCAAGACAAATCTTCCTATTTTCAAGCTGAAAGAATCTACTGTTAGAAGA
AGATACAGTGACTTTGAATGGCTGCGAAGTGAATTAGAAAGAGAGAGCAAGCCCTGCCTCAGAATGACAT
CAGAGGCAAGGAGTCATGGAAGGACGTGGTGTGCTCAGAATGATGAAAAGTTATTTTGTGACTAGAAAGT
CGTAGTTCCCCCGCTCCCTGGGAAAGCGTTTTTGCGTCAGCTTCCTTTTAGAGGAGATGATGGAATATTT
GATGACAATTTTATTGAGGAAAGAAAACAAGGGCTGGAGCAGTTTATAAACAAGGTCGCTGGTCATCCTC
TGGCACAGAACGAACGTTGTCTTCACATGTTTTTACAAGATGAAATAATAGATAAAAGCTATACTCCATC
TAAAATAAGACATGCCTGAAATTTGGCAAGAAGGGGCAAAAACGTGACTATTAATGATTGATAAGCACCA
GTGAAGAAGTTCTAACTTTTAGCATGCTGCACAGAAACTGGTATAACATGCCTTCAGTATACTAACACTC

Figure 36 part - 91

ATATGCTCAGTTTTGTTTTGTTTTGGCAGTTGACAAGAAGTTAATTTGCTTTAGTAAAAATCCCTCATTC
CAGCCTTTCTATATAAATAGCTCTTTCTTGCTGTTTTAATGTGGTGCACACTATAGCCTCACAAACCTGT
TATTCCAGTGTAATCTGCAGTGTCGTAACTAAAGTTACTGGCTTGGTCTTATTTGCACAGTTTTTGCGTC
TTGTTTGCTTCTTGCATCTGATTAACTAGAATATTTCTCTTTCCCCCTTTTAATTTGTGATGTCACTTGA
CCCCATTTATGTGTAGGAGCACTACACCATTGGTTTCCAATACTGCACACATAAGATACATACTTGTGTG
CAGAAAGTATCTTCCTCCAGGCTTGTAATACCCTTCACATGGAAGATTAATGAGGGAAATCTTTATATTC
TGTATAAAAACAAAAGCAAATTTATATACTAAAATCATTTGTCTAAAAATTTAAGTTGTTTTCAAATAAA
AATTAAAATGCATTTCTGATATGCAAAAAAAAAAAAAAAAAAAAAA

Human SNX3 mRNA sequence - var4 (public gi: 15779011) (SEQ ID NO: 165)
GGGGCTTCGCGACCGCTGCGCGCGAGCCCCGTGTCCCCACGGCGGGCAGCAGCGGCGGCGGCGGCGGCTG
AACGCGGAGGGGGCGGAGGGAGCCCGCGGCGGCGGCAGCAGCTACAGCGAAATGGCGGAGACCGTGGCTG
ACACCCGGCGGCTGATCACCAAGCCGCAGAACCTGAATGACGCCTACGGACCCCCCAGCAACTTCCTCGA
GATCGATGTGAGCAACCCGCAAACGGTGGGGGTCGGCCGGGGCCGCTTCACCACTTACGAAATCAGGGTC
AAGACAAATCTTCCTATTTTCAAGCTGAAAGAATCTACTGTTAGAAGAAGATACAGTGACTTTGAATGGC
TGCGAAGTGAATTAGAAAGAGAGAGCAAGGTCGTAGTTCCCCCGCTCCCTGGGAAAGCGTTTTTGCGTCA
GCTTCCTTTTAGAGGAGATGATGGAATATTTGATGACAATTTTATTGAGGAAAGAAAACAAGGGCTGGAG
CAGTTTATAAACAAGGTCGCTGGTCATCCTCTGGCACAGAACGAACGTTGTCTTCACATGTTTTTACAAG
ATGAAATAATAGATAAAAGCTATACTCCATCTAAAATAAGACATGCCTGAAATTTGGCAAGAAGGGGCAA
AAACGTGACTATTAATGATTGATAAGCACCAGTGAAGAAGTTCTAACTTTTAGCATGCTGCACAGAAACT
GGTATAACATGCCTTCAGTATACTAACACTCATATGCTCAGTTTTGTTTTGTTTTGGCAGTTGACAAGAA
GTTAATTTGCTTTAGTAAAAATCCCTCATTCCAGCCTTTCTATATAAATAGCTCTTTCTTGCTGTTTTAA
TGTGGTGCACACTATAGCCTCACAAACCTGTTATTCCAGTGTAATCTGCAGTGTCGTAACTAAAGTTACT
GGCTTGGTCTTATTTGCACAGTTTTTGCGTCTTGTTTGCTTCTTGCATCTGATTAACTAGAATATTTCTC
TTTCCCCCTTTTAATTTGTGATGTCACTTGACCCCATTTATGTGTAGGAGCACTACACCATTGGTTTCCA
ATACTGCACACATAAGATACATACTTGTGTGCAGAAAGTATCTTCCTCCAGGCTTGTAATACCCTTCACA
TGGAAGATTAATGAGGGAAATCTTTATATTCTGTATAAAAACAAAAGCAAATTTATATACTAAAATCATT
TGTCTAAAAATTTAAGTTGTTTTCAAATAAAAATTAAAATGCAAAAAAAAAAAAAAAAAAAAAAAAAAA
AA

Human SNX3 mRNA sequence - var5 (public gi: 15929496) (SEQ ID NO: 166)
CGCGCGAGCCCCGTGTCCCCACGGCGGGCAGCAGCGGCGGCGGCGGCGGCTGAACGCGGAGGGGGCGGAG
GGAGCCCGCGGCGGCGGCAGCAGCTACAGCGAAATGGCGGAGACCGTGGCTGACACCCGGCGGCTGATCA
CCAAGCCGCAGAACCTGAATGACGCCTACGGACCCCCCAGCAACTTCCTCGAGATCGATGTGAGCAACCC
GCAAACGGTGGGGGTCGGCCGGGGCCGCTTCACCACTTACGAAATCAGGGTCAAGACAAATCTTCCTATT
TTCAAGCTGAAAGAATCTACTGTTAGAAGAAGATACAGTGACTTTGAATGGCTGCGAAGTGAATTAGAAA
GAGAGAGCAAGGTCGTAGTTCCCCCGCTCCCTGGGAAAGCGTTTTTGCGTCAGCTTCCTTTTAGAGGAGA
TGATGGAATATTTGATGACAATTTTATTGAGGAAAGAAAACAAGGGCTGGAGCAGTTTATAAACAAGGTC
GCTGGTCATCCTCTGGCACAGAACGAACGTTGTCTTCACATGTTTTTACAAGATGAAATAATAGATAAAA
GCTATACTCCATCTAAAATAAGACATGCCTGAAATTTGGCAAGAAGGGGCAAAAACGTGACTATTAATGA
TTGATAAGCACCAGTGAAGAAGTTCTAACTTTTAGCATGCTGCACAGAAACTGGTATAACATGCCTTCAG
TATACTAACACTCATATGCTCAGTTTTGTTTTGTTTTGGCAGTTGACAAGAAGTTAATTTGCTTTAGTAA
AAATCCCTCATTCCAGCCTTTCTATATAAATAGCTCTTTCTTGCTGTTTTAATGTGGTGCACACTATAGC
CTCACAAACCTGTTATTCCAGTGTAATCTGCAGTGTCGTAACTAAAGTTACTGGCTTGGTCTTATTTGCA
CAGTTTTTGCGTCTTGTTTGCTTCTTGCATCTGATTAACTAGAATATTTCTCTTTCCCCCTTTTAATTTG
TGATGTCACTTGACCCCATTTATGTGTAGGAGCACTACACCATTGGTTTCCAATACTGCACACATAAGAT
ACATACTTGTGTGCAGAAAGTATCTTCCTCCAGGCTTGTAATACCCTTCACATGGAAGATTAATGAGGGA
AATCTTTATATTCTGTATAAAAACAAAAGCAAATTTATATACTAAAATCATTTGTCTAAAAATTTAAGTT
GTTTTCAAATAAAAATTAAAATGCATTTCTGATATGCAAAAAAAAAAAAAAA

Human SNX3 mRNA sequence - var6 (public gi: 14250078) (SEQ ID NO: 167)
AGCCCCGTGTCCCCACGGCGGGCAGCAGCGGCGGCGGCGGCGGCTGAACGCGGAGGGGGCGGAGGGAGCC
CGCGGCGGCGGCAGCAGCTACAGCGAAATGGCGGAGACCGTGGCTGACACCCGGCGGCTGATCACCAAGC
CGCAGAACCTGAATGACGCCTACGGACCCCCCAGCAACTTCCTCGAGATCGATGTGAGCAACCCGCAAAC
GGTGGGGGTCGGCCGGGGCCGCTTCACCACTTACGAAATCAGGGTCAAGACAAATCTTCCTATTTTCAAG
CTGAAAGAATCTACTGTTAGAAGAAGATACAGTGACTTTGAATGGCTGCGAAGTGAATTAGAAAGAGAGA
GCAAGGTCGTAGTTCCCCCGCTCCCTGGGAAAGCGTTTTTGCGTCAGCTTCCTTTTAGAGGAGATGATGG
AATATTTGATGACAATTTTATTGAGGAAAGAAAACAAGGGCTGGAGCAGTTTATAAACAAGGTCGCTGGT
CATCCTCTGGCACAGAACGAACGTTGTCTTCACATGTTTTTACAAGATGAAATAATAGATAAAAGCTATA
CTCCATCTAAAATAAGACATGCCTGAAATTTGGCAAGAAGGGGCAAAAACGTGACTATTAATGATTGATA
AGCACCAGTGAAGAAGTTCTAACTTTTAGCATGCTGCACAGAAACTGGTATAACATGCCTTCAGTATACT
AACACTCATATGCTCAGTTTTGTTTTGTTTTGGCAGTTGACAAGAAGTTAATTTGCTTTAGTAAAAATCC

Figure 36 part - 92

CTCATTCCAGCCTTTCTATATAAATAGCTCTTTCTTGCTGTTTTAATGTGGTGCACACTATAGCCTCACA
AACCTGTTATTCCAGTGTAATCTGCAGTGTCGTAACTAAAGTTACTGGCTTGGTCTTATTTGCACAGTTT
TTGCGTCTTGTTTGCTTCTTGCATCTGATTAACTAGAATATTTCTCTTTCCCCCTTTTAATTTGTGATGT
CACTTGACCCCATTTATGTGTAGGAGCACTACACCATTGGTTTCCAATACTGCACACATAAGATACATAC
TTGTGTGCAGAAAGTATCTTCCTCCAGGCTTGTAATACCCTTCACATGGAAGATTAATGAGGGAAATCTT
TATATTCTGTATAAAAACAAAAGCAAATTTATATACTAAAATCATTTGTCTAAAAATTTAAGTTGTTTTC
AAATAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

Human SNX3 mRNA sequence - var7 (public gi: 12957159) (SEQ ID NO: 168)
GGGCGAGGAGGGAGCCCGCGGCGGCGGCAGCAGCTACAGCGAAATGGCGGAGACCGTGGCTGACACCCGG
CGGCTGATCACCAAGCCGCAGAACCTGAATGACGCCTACGGACCCCCCAGCAACTTCCTCGAGATCGATG
TGAGCAACCCGCAAACGGTGGGGGTCGGCCGGGGCCGCTTCACCACTTACGAAATCAGGGTCAAGGTCGT
AGTTCCCCCGCTCCCTGGGAAAGCGTTTTTGCGTCAGCTTCCTTTTAGAGGAGATGATGGAATATTTGAT
GACAATTTTATTGAGGAAAGAAAACAAGGGCTGGAGCAGTTTATAAACAAGGTCGCTGGTCATCCTCTGG
CACAGAACGAACGTTGTCTTCACATGTTTTTACAAGATGAAATAATAGATAAAAGCTATACTCCATCTAA
AATAAGACATGCCTGAAATTTGGCAAGAAGGGGCAAAAACGTGACTATTAATGATTGATAAGCACCAGTG
AAGAAGTTCTAACTTTTAGCATGCTGCACAGAAACTGGTATAACATGCCTTCAGTATACTAACACTCATA
TGCTCAGTTTTGTTTTGTTTTGGCAGTTGACAAGAAGTTAATTTGCTTTAGTAAAAATCCCTCATTCCAG
CCTTTCTATATAAATAGCTCTTTCTTGCTGTTTTAATGTGGTGCACACTATAGCCTCACAAACCTGTTAT
TCCAGTGTAATCTGCAGTGTCGTAACTAAAGTTACTGGCTTGGTCTTATTTGCACAGTTTTTGCGTCTTG
TTTGCTTCTTGCATCTGATTAACTAGAATATTTCTCTTTCCCCCTTTTAATTTGTGATGTCACTTGACCC
CATTTATGTGTAGGAGCACTACACCATTGGTTTCCAATACTGCACACATAAGATACATACTTGTGTGCAG
AAAGTATCTTCCTCCAGGCTTGTAATACCCTTCACATGGAAGATTAATGAGGGAAATCTTTATATTCTGT
ATAAAAACAAAAGCAAATTTATATACTAAAATCATTTGTCTAAAAATTTAAGTTGTTTTCAAATAAAAAT
TAAAATGCATTTCTGATATGCAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

Human SNX3 mRNA sequence - var8 (public gi: 34304374) (SEQ ID NO: 169)
GTCCGGCCGGAACCTGTTTGCGACCCCGAGTCCCATGACACCGCTTCTCCTCACACCCCAGTCCGCAGTG
CCCCTCCCCAGCCTCGGCCGGGCCTCCCGGGAGCCGGGCGTGGCGTTCCAGCTAGTGAGCCGTTTCTCCC
CTGGGCTCGGAGGCGGAAGCTTGAGGGGCGCGGGGAGGAGCTTCGCGTGCGGGGTGAACGCCCGCTCTAC
GTGCTCGTTCTCTTCGCGACCGCTGCGCGCGAGCCCCGTGTCCCCACGGCGGGCAGCAGCGGCGGCGGCG
GCGGCTGAACGCGGAGGGGGCGGAGGGAGCCCGCGGCGGCGGCAGCAGCTACAGCGAAATGGCGGAGACC
GTGGCTGACACCCGGCGGCTGATCACCAAGCCGCAGAACCTGAATGACGCCTACGGACCCCCCAGCAACT
TCCTCGAGATCGATGTGAGCAACCCGCAAACGGTGGGGGTCGGCCGGGGCCGCTTCACCACTTACGAAAT
CAGGGTCAAGACAAATCTTCCTATTTTCAAGCTGAAAGAATCTACTGTTAGAAGAAGATACAGTGACTTT
GAATGGCTGCGAAGTGAATTAGAAAGAGAGAGCAAGGTCGTAGTTCCCCCGCTCCCTGGGAAAGCGTTTT
TGCGTCAGCTTCCTTTTAGAGGAGATGATGGAATATTTGATGACAATTTTATTGAGGAAAGAAAACAAGG
GCTGGAGCAGTTTATAAACAAGGTCGCTGGTCATCCTCTGGCACAGAACGAACGTTGTCTTCACATGTTT
TTACAAGATGAAATAATAGATAAAAGCTATACTCCATCTAAAATAAGACATGCCTGAAATTTGGCAAGAA
GGGGCAAAAACGTGACTATTAATGATTGATAAGCACCAGTGAAGAAGTTCTAACTTTTAGCATGCTGCAC
AGAAACTGGTATAACATGCCTTCAGTATACTAACACTCATATGCTCAGTTTTGTTTTGTTTTGGCAGTTG
ACAAGAAGTTAATTTGCTTTAGTAAAAATCCCTCATTCCAGCCTTTCTATATAAATAGCTCTTTCTTGCT
GTTTTAATGTGGTGCACACTATAGCCTCACAAACCTGTTATTCCAGTGTAATCTGCAGTGTCGTAACTAA
AGTTACTGGCTTGGTCTTATTTGCACAGTTTTTGCGTCTTGTTTGCTTCTTGCATCTGATTAACTAGAAT
ATTTCTCTTTCCCCCTTTTAATTTGTGATGTCACTTGACCCCATTTATGTGTAGGAGCACTACACCATTG
GTTTCCAATACTGCACACATAAGATACATACTTGTGTGCAGAAAGTATCTTCCTCCAGGCTTGTAATACC
CTTCACATGGAAGATTAATGAGGGAAATCTTTATATTCTGTATAAAAACAAAAGCAAATTTATATACTAA
AATCATTTGTCTAAAAATTTAAGTTGTTTTCAAATAAAAATTAAAATGCATTTCTGATATGCAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAA

Human SNX3 mRNA sequence - var9 (public gi: 30583066) (SEQ ID NO: 170)
ATGGCGGAGACCGTGGCTGACACCCGGCGGCTGATCACCAAGCCGCAGAACCTGAATGACGCCTACGGAC
CCCCCAGCAACTTCCTCGAGATCGATGTGAGCAACCCGCAAACGGTGGGGGTCGGCCGGGGCCGCTTCAC
CACTTACGAAATCAGGGTCAAGACAAATCTTCCTATTTTCAAGCTGAAAGAATCTACTGTTAGAAGAAGA
TACAGTGACTTTGAATGGCTGCGAAGTGAATTAGAAAGAGAGAGCAAGGTCGTAGTTCCCCCGCTCCCTG
GGAAAGCGTTTTTGCGTCAGCTTCCTTTTAGAGGAGATGATGGAATATTTGATGACAATTTTATTGAGGA
AAGAAAACAAGGGCTGGAGCAGTTTATAAACAAGGTCGCTGGTCATCCTCTGGCACAGAACGAACGTTGT
CTTCACATGTTTTTACAAGATGAAATAATAGATAAAAGCTATACTCCATCTAAAATAAGACATGCCTAG

Human SNX3 mRNA sequence - var10 (public gi: 3127052) (SEQ ID NO: 171)
GGGCGAGGAGGGAGCCCGCGGCGGCGGCAGCAGCTACAGCGAAATGGCGGAGACCGTGGCTGACACCCGG

Figure 36 part - 93

CGGCTGATCACCAAGCCGCAGAACCTGAATGACGCCTACGGACCCCCCAGCAACTTCCTCGAGATCGATG
TGAGCAACCCGCAAACGGTGGGGGTCGGCCGGGGCCGCTTCACCACTTACGAAATCAGGGTCAAGACAAA
TCTTCCTATTTTCAAGCTGAAAGAATCTACTGTTAGAAGAAGATACAGTGACTTTGAATGGCTGCGAAGT
GAATTAGAAAGAGAGAGCAAGGTCGTAGTTCCCCCGCTCCCTGGGAAAGCGTTTTTGCGTCAGCTTCCTT
TTAGAGGAGATGATGGAATATTTGATGACAATTTTATTGAGGAAAGAAAACAAGGGCTGGAGCAGTTTAT
AAACAAGGTCGCTGGTCATCCTCTGGCACAGAACGAACGTTGTCTTCACATGTTTTTACAAGATGAAATA
ATAGATAAAAGCTATACTCCATCTAAAATAAGACATGCCTGAAATTTGGCAAGAAGGGGCAAAAACGTGA
CTATTAATGATTGATAAGCACCAGTGAAGAAGTTCTAACTTTTAGCATGCTGCACAGAAACTGGTATAAC
ATGCCTTCAGTATACTAACACTCATATGCTCAGTTTTGTTTTGTTTTGGCAGTTGACAAGAAGTTAATTT
GCTTTAGTAAAAATCCCTCATTCCAGCCTTTCTATATAAATAGCTCTTTCTTGCTGTTTTAATGTGGTGC
ACACTATAGCCTCACAAACCTGTTATTCCAGTGTAATCTGCAGTGTCGTAACTAAAGTTACTGGCTTGGT
CTTATTTGCACAGTTTTTGCGTCTTGTTTGCTTCTTGCATCTGATTAACTAGAATATTTCTCTTTCCCCC
TTTTAATTTGTGATGTCACTTGACCCCATTTATGTGTAGGAGCACTACACCATTGGTTTCCAATACTGCA
CACATAAGATACATACTTGTGTGCAGAAAGTATCTTCCTCCAGGCTTGTAATACCCTTCACATGGAAGAT
TAATGAGGGAAATCTTTATATTCTGTATAAAAACAAAAGCAAATTTATATACTAAAATCATTTGTCTAAA
AATTTAAGTTGTTTTCAAATAAAAATTAAAATGCATTTCTGATATGCAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAA

Human SNX3 mRNA sequence - var11 (public gi: 3126978) (SEQ ID NO: 172)
GCGGCACAGCTACAGCGAAATGGCGGAGACCGTGGCTGACACCCGGCGGCTGATCACCAAGCCGCAGAAC
CTGAATGACGCCTACGGACCCCCCAGCAACTTCCTCGAGATCGATGTGAGCAACCCGCAAACGGTGGGGG
TCGGCCGGGGCCGCTTCACCACTTACGAAATCAGGGTCAAGACAAATCTTCCTATTTTCAAGCTGAAAGA
ATCTACTGTTAGAAGAAGATACAGTGACTTTGAATGGCTGCGAAGTGAATTAGAAAGAGAGAGCAAGGTC
GTAGTTCCCCCGCTCCCTGGGAAAGCGTTTTTGCGTCACTTCCCTTTTAGAGGAGATGATGGAATATTTG
ATGACAATTTTATTGAGGAAAGAAAACAAGGGCTGGAGCAGTTTATAAACAAGGTCGCTGGTCATCCTCT
GGCACAGAACGAACGTTGTCTTCACATGTTTTTACAAGATGAAATAATAGATAAAAGCTATACTCCATCT
AAAATAAGACATGCCTGAAATTTGGCAAGAAGGGGCAAAAACCGTGACTATTAATGATTGATAAGCACCA
GTGAAGAAGTTCTAACTTTTAGCATGCTGCACAGAAACTGGTATAACATGCCTTCAGTATACTAACACTC
CATATGCTCAGTTTTGTTTTGTTTTGGCAGTTGACAAGAAGTTAATTTGCTTTAGTAAAAATCCCTCATT
CCAGCCTTTCTATATAAATAGCTCCTTCCTGCTGTTTTAATGTGGGTGCACACTATAGCCTCACAACCTG
GTTAATCCAGTGTAATCTGCAGTGTCGTAACTAAAGTACTGGCTTGGTCCTAATTG

Human SNX3 protein sequence - var1 (public gi: 23111041) (SEQ ID NO: 287)
MAETVADTRRLITKPQNLNDAYGPPSNFLEIDVSNPQTVGVGRGRFTTYEIRVKVVVPPLPGKAFLRQLP
FRGDDGIFDDNFIEERKQGLEQFINKVAGHPLAQNERCLHMFLQDEIIDKSYTPSKIRHA

Human SNX3 protein sequence - var2 (public gi: 23111043) (SEQ ID NO: 288)
MAETVADTRRLITKPQNLNDAYGPPSNFLEIDVSNPQTVGVGRGRFTTYEIRVKTNLPIFKLKESTVRRR
YSDFEWLRSELERESKPCLRMTSEARSHGRTWCAQNDEKLFCD

Human SNX3 protein sequence - var3 (public gi: 15779012) (SEQ ID NO: 289)
MAETVADTRRLITKPQNLNDAYGPPSNFLEIDVSNPQTVGVGRGRFTTYEIRVKTNLPIFKLKESTVRRR
YSDFEWLRSELERESKVVVPPLPGKAFLRQLPFRGDDGIFDDNFIEERKQGLEQFINKVAGHPLAQNERC
LHMFLQDEIIDKSYTPSKIRHA

Human SNX3 protein sequence - var4 (public gi: 3126979) (SEQ ID NO: 290)
MAETVADTRRLITKPQNLNDAYGPPSNFLEIDVSNPQTVGVGRGRFTTYEIRVKTNLPIFKLKESTVRRR
YSDFEWLRSELERESKVVVPPLPGKAFLRHFPFRGDDGIFDDNFIEERKQGLEQFINKVAGHPLAQNERC
LHMFLQDEIIDKSYTPSKIRHA

Human SNX3 pray sequence - var1 (SEQ ID NO: 173)
GCCGCCATGGNAGTACCCATACGACGTACCAGATTACGCTCATATGGCCATGGAGGCCAGTGAATTCCAC
CCAAGCAGTGGTATCAACGCAGAGTGGCCATTATGGCGGCGGCGGCGGCGGCTGAACGCGGAGGGGGCGG
AGGGAGCCCGCGGCGGCGGCAGCAGCTACAGCGAAATGGCGGAGACCGTGGCTGACACCCGGCGGCTGAT
CACCAAGCCGCAGAACCTGAATGACGCCTACGGACCCCCCAGCAACTTCCTCGAGATCGATGTGAGCAAC
CCGCAAACGGTGGGGGTCGGCCGGGGCCGCTTCACCACTTACGAAATCAGGGTCAAGACAAATCTTCCTA
TTTTCAAGCTGAAAGAATCTACTGTTAGAAGAAGATACAGTGACTTTGAATGGCTGCGAAGTGAATCAGA
AAGAGAGAGCAAGGTCGTAGTTCCCCNNGCTCCCTGGGAAAGCGTTTTTGCGTCAGCTTCCTTTTAGAGG
AGATGATGGAATATTTGATGACAATTTTATTGAGGAAAGAAAACAAGGGCTGGAGCAGTTTATAAACAAG
GTCGCTGGTCATCCTCTGGCACAAAACGAACGTTGTCTTCACATGTTTTTACANGATGAAATANTNGATA
AAAGCTNTACTCCATCTAAAATAAAACATGCCTGAANTTTGGCANAANGGGCNAAAACGTGACTATTATG

Figure 36 part - 94

ATTGANAGCCCCNNNNAAAANTTCTANNTTTNNCNTGCTNACAAAACTGNNTAANTGCCTNANNTACTAA
CCTNNNTNCCNANTTTNNTTTGNNTGGNNNTNAAAAAATNAT

Human SNX3 pray sequence - var2 (SEQ ID NO: 174)
CCGCCATGGTAGTACCCATACGACGTACCAGTATTACGCTCATATGGCCATGGCAGGCCAGTGAATTCCA
CCCAAGCAGTGGTATCAACGCAGAGTGGCCATTATGGCCGGGGGCAGGAGGGAGCCCAGCGGCGGCGGCA
GCAGCTACAGCGAAATGGCGGAGACCGTGGCTGACACCCGGCGGCTGATCACCAAGCCGCAGAACCTGAA
TGACGCCTACGGACCCCCCAGCAACTTCCTCGAGATCGATGTGAGCAACCCGCAAACGGTGGGGGTCGGC
CGGGGCCGCTTCACCACTTACGAAATCAGGGTCAAGACAAATCTTCCTATTTTCAAGCTGAAAGAATCTA
CTGTTAGAAGAAGATACAGTGACTTTGAATGGCTGCGAAGTGAATTAGAAAGAGAGAGCAAGGTCGTAGT
TCCCCCGCTCCCTGGGAAAGCGTTTTTGCGTCAGCTTNCTTTTAGAGGGGATGATGGAATATTTGATGAC
AATTTTATTGAGGAAAGAAAACAAGGGCTGGANCANTTTATNAACAAGTNAGTGCTTNCTATTCCTNAAA
GTGTANGACTNCTTTAAGTGACTACTTTTNTTTANATGTNAANNNAACTGNACTGTNNCNTTTNTTTNAN
CNTTTCCTANNTTTNATTTNTTTAA

Unigene Name: SRA1 Unigene ID: Hs.32587 Clone ID: 3GD_19

Human SRA1 mRNA sequence - var1 (public gi: 10436964) (SEQ ID NO: 175)
ACGTGAAGCCGGGTGAGCGCAGCCGGCGGGCTAGGGCACTAGGTCGTCGCCCCGGCCTAGGCTGGGGGCG
GTTGCGGCGCTTAGTATGGACCCTCTGTCTCCCCCAGCCCCAGTATAAGCTAACAGTGGAGTTCCGGGCT
CGCTTCACACATCCCTCGCCTCCGCAGGCAACAAGGAACGCGGCTGGAACGACCCGCCGCAGTTCTCATA
CGGGCTGCAGACCCAGGCCGGCGGACCCAGGCGCTCGCTGCTTACCAAGAGGGTAGCCGCACCCCAGGAT
GGATCCCCCAGAGTCCCCGCATCAGAGACTTCTCCTGGGCCTCCCCCAATGGGGCCTCCACCTCCTTCAA
GTAAGGTTCCCAGGTCCCCACCTGTGGGGAGTGGTCCTGCCTCTGGCGTGGAGCCCACAAGTTTCCCAGT
CGAGTCTGAGGCTCGACTGATGGAGGATGTGCTGAGACCTTTGGAACAGGCATTGGAAGACTGCCGTGGC
CACACAAGGAAGCAGGTATGTGATGACATCAGCCGACGCCTGGCACTGCTGCAGGAACAGTGGGCTGGAG
GAAAGTTGTCAATACCTGTAAAGAAGAGAATGGCTCTACTGGTGCAAGAGCTTTCAAGCCACCGGTGGGA
CGCAGCAGATGACATCCACCGCTCCCTCATGGTTGACCATGTGACTGAGGTCAGTCAGTGGATGGTAGGA
GTTAAAAGATTAATTGCAGAAAAGAGGAGTCTGTTTTCAGAGGAGGCAGCCAATGAAGAGAAATCTGCAG
CCACAGCTGAGAAGAACCATACCATACCAGGCTTCCAGCAGGCTTCATAATCCTCGGTTCCCCAGACTCA
CCGGACACCATCTCCTATGCCTTGGAGACCTTCTGTCACTTGGCTCCCTTCTTACCACCACCAAGACTGT
CCCACTGGGCCTGACCCACCTATGAGGGAAGAAGTCCCACCTGGGCCAGAGGGAGTTCATGTGTTACTCA
TAACATGCATTTCAATAAAAACATCTCTGCGGTGGGCCTTGGGTAGGAGAGATGAACCCTTCCGGTGCCA
AGCTAGTCCCCTCTGGTGTCCTCGACTGCCCTGCTCCCTGTGTATCTGCAAACCTCTGTTCTCCCTTCTC
CATTCATCAGGAAGGGATCTGCTGGGTAAAGTCAGACTACTGCCTACCACTTTTTCCCAAAGTAGACTGA
AAGCACATCCTGTGCTGGGCGGAGCAGCTGTGTTTGGATGGTTTCATTTCAGCATGAGAACAGACTCAAA
TAGAACGGGGAGACTTTTCCCTCAACAAAAGGAAAGACAGTCCTATTTGCACTGTATCACCCTTGAGATA
CTACTGTTACAGAGATTAGAACCACATTGAGTGGGGTTTTCTGTGTAAATCGAAGGAGAAAAAGACCAGA
TTACTGAGATTGGGGATTGTAACTCTGACTTGCCAAACAAACTGCTGCCTCAAAAAAAAAAAAAAAAA

Human SRA1 mRNA sequence - var2 (public gi: 9930611) (SEQ ID NO: 176)
TCCTTTGGTGCCTTGTGACCAGGGCCCTGATGGTTCATTAGATGGAGCCTTCGAGTCTTAGGGAGTTGCC
GCAGGGTCCCCACAGCGGCTCCCGACGGTTGTGAACCAGCATCCATCCTCCACGGATTCCGGCAACCCGC
CTGGCCCTGGACGTGTCTCAACTGGCCCGCGTGAGGGGCCGCCCCGGAAATGACGCGCTGCCCCGCTGGC
CAAGCGGAAGTGGAGATGGCGGAGCTGTACGTGAAGCCGGGCAACAAGGAACGCGGCTGGAACGACCCGC
CGCAGTTCTCATACGGGCTGCAGACCCAGGCCGGCGGACCCAGGCGCTCGCTGCTTATCAAGAGGGTCGC
CGCACCCCAGGATGGATCCCCCAGAGTCCCCGCATCAGAGACTTCTCCTGGGCCTCCCCCAATGGGGCCT
CCACCTCCTTCAAGTAAGGCTCCCAGGTCCCCACCTGTGGGGAGTGGTCCTGCCTCTGGCGTGGAGCCCA
CAAGTTTCCCAGTCGAGTCTGAGGCTGTGATGGAGGATGTGCTGAGACCTTTGGAACAGGCATTGGAAGA
CTGCCGTGGCCACACAAGGAAGCAGGTATGTGATGACATCAGCCGACGCCTGGCACTGCTGCAGGAACAG
TGGGCTGGAGGAAAGTTGTCAATACCTGTAAAGAAGAGAATGGCTCTACTGGTGCAAGAGCTTTCAAGCC
ACCGGTGGGACGCAGCAGATGACATCCACCGCTCCCTCATGGTTGACCATGTGACTGAGGTCAGTCAGTG
GATGGTAGGAGTTAAAAGATTAATTGCAGAAAAGAGGAGTCTGTTTTCAGAGGAGGCAGCCAATGAAGAG
AAATCTGCAGCCACAGCTGAGAAGAACCATACCATACCAGGCTTCCAGCAGGCTTCATAATCCTCGGTTC
CCCAGACT

Human SRA1 mRNA sequence - var3 (public gi: 9930613) (SEQ ID NO: 177)
TCCTTTGGTGCCTTGTGACCAGGGCCCTGATGGTTCATTAGATGGAGCCTTCGAGTCTTAGGGAGTTGCC
GCAGGGTCCCCACAGCGGCTCCCGACGGTTGTGAACCAGCATCCATCCTCCACGGATTCCGGCAACCCGC
CTGGCCCTGGACGTGTCTCAACTGGCCCGCGTGAGGGGCCGCCCCGGAAATGACGCGCTGCCCCGCTGGC
CAAGCGGAAGTGGAGATGGCGGAGCTGTACGTGAAGCCGGGCAACAAGGAACGCGGCTGGAACGACCCGC

Figure 36 part - 95

CGCAGTTCTCATACGGGCTGCAGACCCAGGCCGGCGGACCCAGGCGCTCGCTGCTTACCAAGAGGGTAGC
CGCACCCCAGGATGGATCCCCCAGAGTCCCCGCATCAGAGACTTCTCCTGGGCCTCCCCCAATGGGGCCT
CCACCTCCTTCAAGTAAGGCTCCCAGGTCCCCACCTGTGGGGAGTGGTCCTGCCTCTGGCGTGGAGCCCA
CAAGTTTCCCAGTCGAGTCTGAGGCTCGACTGATGGAGGATGTGCTGAGACCTTTGGAACAGGCATTGGA
AGACTGCCGTGGCCACACAAGGAAGCAGGTATGTGATGACATCAGCCGACGCCTGGCACTGCTGCAGGAA
CAGTGGGCTGGAGGAAAGTTGTCAATACCTGTAAAGAAGAGAATGGCTCTACTGGTGCAAGAGCTTTCAA
GCCACCGGTGGGACGCAGCAGATGACATCCACCGCTCCCTCATGGTTGACCATGTGACTGAGGTCAGTCA
GTGGATGGTAGGAGTTAAAAGATTAATTGCAGAAAAGAGGAGTCTGTTTTCAGAGGAGGCAGCCAATGAA
GAGAAATCTGCAGCCACAGCTGAGAAGAACCATACCATACCAGGCTTCCAGCAGGCTTCATAATCCTCGG
TTCCCCAGACT

Human SRA1 mRNA sequence - var4 (public gi: 4588026) (SEQ ID NO: 178)
CGCTTGGCGGAGCTGTACGTGAAGCCGGGCAACAAGGAACGCGGCTGGAACGACCCGCCGCAGTTCTCAT
ACGGGCTGCAGACCCAGGCCGGCGGACCCAGGCGCTCGCTGCTTACCAAGAGGGTAGCCGCACCCCAGGA
TGGATCCCCCAGAGTCCCCGCATCAGAGACTTCTCCTGGGCCTCCCCCAATGGGGCCTCCACCTCCTTCA
AGTAAGGCTCCCAGGTCCCCACCTGTGGGGAGTGGTCCTGCCTCTGGCGTGGAGCCCACAAGTTTCCCAG
TCGAGTCTGAGGCTGTGATGGAGGATGTGCTGAGACCTTTGGAACAGGCATTGGAAGACTGCCGTGGCCA
CACAAGGAAGCAGGTATGTGATGACATCAGCCGACGCCTGGCACTGCTGCAGGAACAGTGGGCTGGAGGA
AAGTTGTCAATACCTGTAAAGAAGAGAATGGCTCTACTGGTGCAAGAGCTTTCAAGCCACCGGTGGGACG
CAGCAGATGACATCCACCGCTCCCTCATGGTTGACCATGTGACTGAGGTCAGTCAGTGGATGGTAGGAGT
TAAAAGATTAATTGCAGAAAAGAGGAGTCTGTTTTCAGAGGAGGCAGCCAATGAAGAGAAATCTGCAGCC
ACAGCTGAGAAGAACCATACCATACCAGGCTTCCAGCAGGCTTCATAATCCTCGGTTCCCCAGACTCACC
GGACACCATCTCCTATGCCTTGGAGACCTTCTGTCACTTGGCTCCCTTCTTACCACCACCAAGACTGTCC
CACTGGGCCTGACCCACCTATGAGGGAAGAAGTCCCACCTGGGCCAGAGGGAGTTCATGTGTTACTCATA
ACATGCATTTCAATAAAAACATCTCTGCGGTGGTG

Human SRA1 mRNA sequence - var5 (public gi: 25123254) (SEQ ID NO: 179)
GGCGGAGCTGTACGTGAAGCCGGGCAACAAGGAACGCGGCTGGAACCCCGCCGCAGTTCTCATACGGGCT
GCAGACCCAGGCCGGCGGACCCAGGCGCTCGCTGCTTACCAAGAGGGTCGCCGCACCCCAGGATGGATCC
CCCAGAGTCCCCGCATCAGAGACTTCTCCTGGGCCTCCCCCAATGGGGCCTCCACCTCCTTCAAGTAAGG
CTCCCAGGTCCCCACCTGTGGGGAGTGGTCCTGCCTCTGGCGTGGAGCCCACAAGTTTCCCAGTCGAGTC
TGAGGCTGTGATGGAGGATGTGCTGAGACCTTTGGAACAGGCATTGGAAGACTGCCGTGGCCACACAAGG
AAGCAGGTATGTGATGACATCAGCCGACGCCTGGCACTGCTGCAGGAACAGTGGGCTGGAGGAAAGTTGT
CAATACCTGTAAAGAAGAGAATGGCTCTACTGGTGCAAGAGCTTTCAAGCCACCGGTGGGACGCAGCAGA
TGACATCCACCGCTCCCTCATGGTTGACCATGTGACTGAGGTCAGTCAGTGGATGGTAGGAGTTAAAAGA
TTAATTGCAGAAAAGAGGAGTCTGTTTTCAGAGGAGGCAGCCAATGAAGAGAAATCTGCAGCCACAGCTG
AGAAGAACCATACCATACCAGGCTTCCAGCAGGCTTCATAATCCTCGGTTCCCCAGACTCACCGGACACC
ATCTCCTATGCCTTGGAGACCTTCTGTCACTTGGCTCCCTTCTTACCACCACCAAGACTGTCCCACTGGG
CCTGACCCACCTATGAGGGAAGAAGTCCCACCTGGGCCAGAGGGAGTTCATGTGTTACTCATAACATGCA
TTTCAATAAAAACATCTCTGCGGTGAAAAAAAAAAAAAAA

Human SRA1 mRNA sequence - var6 (public gi: 18027813) (SEQ ID NO: 180)
GCAGGCACTAAGCTGGGCACTGGGAATGTAATAAAATAGTCAAGGTCCCACCTTCTAAGACTGTCCGACA
GGGAAACGAACAAGAGTCAAATAAGGCAGAAGATGTGATGTAATACACCTACGAAATCTCAGAGGGTTGT
AGGGTCGTGGGAGCTCAAGTGAGACACTTAACCTGGCCTGAGACATTCCAGAAGGCCTCCTGAAGAACTG
ACATCTGAACTGAGAACTGAAGGAAGATGAGTACTAGTGAGGCTACCGGACGTGAATGTGGAGATTGTGC
AGGGCAATGCAAGAGGAGGCTGTAGAAGTCAACCTGGCTAGATCACAGCGGGGTGTATGTGGGGCAGGAG
CTTCTTTGTTTGAATTTGCTCCTGAGAGGATGAGGCCTCCTAGAGCACTGGCTCCTGGACAGCAACCTCC
TTTGGTGCCTTGTGACCAGGGCCCTGATGGTTCATTAGATGGAGCCTTCGAGTCTTAGGGAGTTGCCGCA
GGGTCCCCACAGCGGCTCCCGACGGTTGTGAACCAGCATCCATTCTCCACGGATTCCGGCAACCCGCCTG
GCCCTGGACGTGTCTCAACTGGCCCGCGTGAGGGGCCGCCCCGGAAATGACGCGCTGCCCCGCTGGCCAA
GCGGAAGTGGAGATGGCGGAGCTGTACGTGAAGCCGGGCAACAAGGAACGCGGCTGGAACGACCCGCCGC
AGTTCTCATACGGGCTGCAGACCCAGGCCGGCGGACCCAGGCGCTCGCTGCTTACCAAGAGGGTAGCCGC
ACCCCAGGATGGATCCCCCAGAGTCCCCGCATCAGAGACTTCTCCTGGGCCTCCCCCAATGGGGCCTCCA
CCTCCTTCAAGTAAGGCTCCCAGGTCCCCACCTGTGGGGAGTGGTCCTGCCTCTGGCGTGGAGCCCACAA
GTTTCCCAGTCGAGTCTGAGGCTCGACTGATGGAGGATGTGCTGAGACCTTTGGAACAGGCATTGGAAGA
CTGCCGTGGCCACACAAGGAAGCAGGTATGTGATGACATCAGCCGACGCCTGGCACTGCTGCAGGAACAG
TGGGCTGGAGGAAAGTTGTCAATACCTGTAAAGAAGAGAATGGCTCTACTGGTGCAAGAGCTTTCAAGCC
ACCGGTGGGACGCAGCAGATGACATCCACCGCTCCCTCATGGTTGACCATGTGACTGAGGTCAGTCAGTG
GATGGTAGGAGTTAAAAGATTAATTGCAGAAAAGAGGAGTCTGTTTTCAGAGGAGGCAGCCAATGAAGAG
AAATCTGCAGCCACAGCTGAGAAGAACCATACCATACCAGGCTTCCAGCAGGCTTCATAATCCTCGGTTC
CCCAGACTCACCGGACACCATCTCCTATGCCTTGGAGACCTTCTGTCACTTGGCTCCCTTCTTACCACCA

Figure 36 part - 96

CCAAGACTGTCCCACTGGGCCTGACCCACCTATGAGGGAAGAAGTCCCACCTGGGCCAGAGGGAGTTCAT
GTGTTACTCATAACATGCATTTCAATAAAAACATCTCTGCGGTGGAAAAAAAAAAAAAAAAAAA

Human SRA1 mRNA sequence - var7 (public gi: 16549596) (SEQ ID NO: 181)
TTATAGCAAAATCAGTGCAAATAAAAATCCCTCAGTGACCTCACTGGATGTGAGTATATTGGGCCTGGGA
CAGGGCTGGGGGCTAACACCCTGTGTGAGATGAGTGTCTTTGTGTCTGTGCTTGATGTTGGTGGCTCTCT
GTAGTCACATGACAGCATGGGTGTGATGGAGATCTGACTTCATTCAACAAACATATTTTCTAAGGAGTTC
CCTGTGCCAGGCACTAAGCTGGGCACTGGGAATGTAATAAAATAGTCAAGGTCCCACCTTCTAAGACTGT
CCGACAGGGAAACGAACAAGAGTCAAATAAGGCAGAAGATGTGATGTAATACACCTACGAAATCTCAGAG
GGTTGTAGGGTCGTGGGAGCTCAAGTGAGACACTTAACCTGGCCTGAGACATTCCAGAAGGCCTCCTGAA
GAACTGACATCTGAACTGAGAACTGAAGGAAGATGAGTACTAGTGAGGCTACCGGACGTGAATGTGGAGA
TTGTGCAGGGCAATGCAAGAGGAGGCTGTAGAAGTCAACCTGGCTAGATCACAGCGGGGTGTATGTGGGG
CAGGAGCTTCTTTGTTTGAATTTGCTCCTGAGAGGATGAGGCCTCCTAGAGCACTGGCTCCTGGACAGCA
ACCTCCTTTGGTGCCTTGTGACCAGGGCCCTGATGGTTCATTAGATGGAGCCTTCGAGTCTTAGGGAGTT
GCCGCAGGGTCCCCACAGCGGCTCCCGACGGTTGTGAACCAGCATCCATTCTCCACGGATTCCGGCAACC
CGCCTGGCCCTGGACGTGTCTCAACTGGCCCGCGTGAGGGGCCGCCCCGGAAATGACGCGCTGCCCCGCT
GGCCAAGCGGAAGTGGAGATGGCGGAGCTGTACGTGAAGCCGGGCAACAAGGAACGCGGCTGGAACGACC
CGCCGCAGTTCTCATACGGGCTGCAGACCCAGGCCGGCGGACCCAGGCGCTCGCTGCTTACCAAGAGGGT
AGCCGCACCCCAGGATGGATCCCCCAGAGTCCCCGCATCAGAGACTTCTCCTGGGCCTCCCCCAATGGGG
CCTCCACCTCCTTCAAGTAAGGCTCCCAGGTCCCCACCTGTGGGGAGTGGTCCTGCCTCTGGCGTGGAGC
CCACAAGTTTCCCAGTCGAGTCTGAGGCTCGACTGATGGAGGATGTGCTGAGACCTTTGGAACAGGCATT
GGAAGACTGCCGTGGCCACACAAGGAAGCAGGTATGTGATGACATCAGCCGACGCCTGGCACTGCTGCAG
GAACAGTGGGCTGGAGGAAAGTTGTCAATACCTGTAAAGAAGAGAATGGCTCTACTGGTGCAAGAGCTTT
CAAGCCACCGGTGGGACGCAGCAGATGACATCCACCGCTCCCTCATGGTTGACCATGTGACTGAGGTCAG
TCAGTGGATGGTAGGAGTTAAAAGATTAATTGCAGAAAAGAGGAGTCTGTTTTCAGAGGAGGCAGCCAAT
GAAGAGAAATCTGCAGCCACAGCTGAGAAGAACCATACCATACCAGGCTTCCAGCAGGCTTCATAATCCT
CGGTTCCCCAGACTCACCGGACACCATCCCCTATGCCTTGGAGACCTTCTGTCACTTGGCTCCCTTCTTA
CCACCACCAAGACTGTCCCACTGGGCCTGACCCACCTATGAGGGAAGAAGTCCCACCTGGGCCAGAGGGA
GTTCATGTGTTACTCATAACATGCATTTCAATAAAAACATCTCTGCGGTGGGCCTTGGGTAGGAGAGATG
AACCCTTCCGGTGCCAAGCTAGTCCCCTCTGGTGTCCTCGACTGCCCTGCTCCCTGTGTATCTGCAAACC
TCTGTTCTCCCTTCTCCATTCATCAGGAAGGGATCTGCTGGGTAAAGTCAGACTACTGCCTACCACTTTT
TCCCAAAGTAGACTGAAAGCACATCCTGTGCTGGGCGGAGCAGCTGTGTTTGGATGGTTTCATTTCAGCA
TGAGAACAGACTCAAATAGAACGGGGAGACTTTTCCCTCAACAAAAGGAAAGACAGTCCTATTTGCACTG
TATCACCCTTGAGATACTACTGTTACAGAGATTAGAACC

Human SRA1 mRNA sequence - var8 (public gi: 9930609) (SEQ ID NO: 182)
TCCTTTGGTGCCTTGTGACCAGGGCCCTGATGGTTCATTAGATGGAGCCTTCGAGTCTTAGGGAGTTGCC
GCAGGGTCCCCACAGCGGCTCCCGACGGTTGTGAACCAGCATCCATCCTCCACGGATTCCGGCAACCCGC
CTGGCCCTGGACGTGTCTCAACTGGCCCGCGTGAGGGGCCGCCCCGGAAATGACGCGCTGCCCCGCTGGC
CAAGCGGAAGTGGAGATGGCGGAGCTGTACGTGAAGCCGGGCAACAAGGAACGCGGCTGGAACGACCCGC
CGCAGTTCTCATACGGGCTGCAGACCCAGGCCGGCGGACCCAGGCGCTCGCTGCTTACCAAGAGGGTAGC
CGCACCCCAGGATGGATCCCCCAGAGTCCCCGCATCAGAGACTTCTCCTGGGCCTCCCCCAATGGGGCCT
CCACCTCCTTCAAGTAAGGCTCCCAGGTCCCCACCTGTGGGGAGTGGTCCTGCCTCTGGCGTGGAGCCCA
CAAGTTTCCCAGTCGAGTCTGAGGCTGTGATGGAGGATGTGCTGAGACCTTTGGAACAGGCATTGGAAGA
CTGCCGTGGCCACACAAGGAAGCAGGTATGTGATGACATCAGCCGACGCCTGGCACTGCTGCAGGAACAG
TGGGCTGGAGGAAAGTTGTCAATACCTGTAAAGAAGAGAATGGCTCTACTGGTGCAAGAGCTTTCAAGCC
ACCGGTGGGACGCAGCAGATGACATCCACCGCTCCCTCATGGTTGACCATGTGACTGAGGTCAGTCAGTG
GATGGTAGGAGTTAAAAGATTAATTGCAGAAAAGAGGAGTCTGTTTTCAGAGGAGGCAGCCAATGAAGAG
AAATCTGCAGCCACAGCTGAGAAGAACCATACCATACCAGGCTTCCAGCAGGCTTCATAATCCTCGGTTC
CCCAGACT

Human SRA1 protein sequence - var1 (public gi: 9930610) (SEQ ID NO: 291)
MTRCPAGQAEVEMAELYVKPGNKERGWNDPPQFSYGLQTQAGGPRRSLLTKRVAAPQDGSPRVPASETSP
GPPPMGPPPPSSKAPRSPPVGSGPASGVEPTSFPVESEAVMEDVLRPLEQALEDCRGHTRKQVCDDISRR
LALLQEQWAGGKLSIPVKKRMALLVQELSSHRWDAADDIHRSLMVDHVTEVSQWMVGVKRLIAEKRSLFS
EEAANEEKSAATAEKNHTIPGFQQAS

Human SRA1 protein sequence - var2 (public gi: 25123255) (SEQ ID NO: 292)
MGPPPPSSKAPRSPPVGSGPASGVEPTSFPVESEAVMEDVLRPLEQALEDCRGHTRKQVCDDISRRLALL
QEQWAGGKLSIPVKKRMALLVQELSSHRWDAADDIHRSLMVDHVTEVSQWMVGVKRLIAEKRSLFSEEAA
NEEKSAATAEKNHTIPGFQQAS

Figure 36 part - 97

Human SRA1 protein sequence - var3 (public gi: 9930614) (SEQ ID NO: 293)
MTRCPAGQAEVEMAELYVKPGNKERGWNDPPQFSYGLQTQAGGPRRSLLTKRVAAPQDGSPRVPASETSP
GPPPMGPPPPSSKAPRSPPVGSGPASGVEPTSFPVESEARLMEDVLRPLEQALEDCRGHTRKQVCDDISR
RLALLQEQWAGGKLSIPVKKRMALLVQELSSHRWDAADDIHRSLMVDHVTEVSQWMVGVKRLIAEKRSLF
SEEAANEEKSAATAEKNHTIPGFQQAS

Human SRA1 protein sequence - var4 (public gi: 9930612) (SEQ ID NO: 294)
MTRCPAGQAEVEMAELYVKPGNKERGWNDPPQFSYGLQTQAGGPRRSLLIKRVAAPQDGSPRVPASETSP
GPPPMGPPPPSSKAPRSPPVGSGPASGVEPTSFPVESEAVMEDVLRPLEQALEDCRGHTRKQVCDDISRR
LALLQEQWAGGKLSIPVKKRMALLVQELSSHRWDAADDIHRSLMVDHVTEVSQWMVGVKRLIAEKRSLFS
EEAANEEKSAATAEKNHTIPGFQQAS

Unigene Name: SYNE1 Unigene ID: Hs.416719 Clone ID: 3GD_138aa2938

Human SYNE1 mRNA sequence - var1 (public gi: 21753084) (SEQ ID NO: 183)
GTACAAAAACGAACTTTCACAAAATGGATCAACTCTCATCTGGCCAAGCGGAAACCTCCAATGGTGGTGG
ACGATCTTTTTGAAGACATGAAAGATGGTGTTAAACTGCTTGCCCTTCTGGAGGTCCTGTCTGGGCAGAA
ACTGCCTTGTGAACAAGGACGCCGGATGAAGCGAATCCATGCTGTGGCTAACATTGGCACGGCACTCAAG
TTCCTCGAAGGAAGAAAGATTAAATTAGTCAACATTAACTCCACCGATATAGCTGATGGCCGACCCTCAA
TAGTTCTTGGATTGATGTGGACCATTATTCTATATTTCCAGATTGAAGAGTTGACCAGCAACCTGCCCCA
GCTCCAGTCTTTGTCCAGCAGCGCATCCTCCGTGGACAGCATAGTTAGCTCTGAGACTCCCAGCCCACCA
AGTAAACGGAAGGTGACCACCAAGATCCAAGGAAATGCTAAGAAGGCTTTATTAAAGTGGGTTCAGTACA
CAGCTGGCAAGCAGACTGGAATAGAAGTAAAAGATTTTGGGAAGAGTTGGAGAAGCGGGGTTGCCTTTCA
TTCAGTTATTCATGCCATTCGACCGGAATTGGTGGACTTGGAGACAGTGAAAGGCAGATCCAACCGAGAA
AATTTGGAGGATGCTTTCACTATCGCTGAAACAGAACTGGGGATCCCAAGACTGCTAGATCCTGAAGACG
TTGATGTGGATAAACCAGATGAGAAATCTATTATGACCTATGTAGCCCAGTTTCTGAAACATTATCCTGA
CATCCACAATGCAAGCACTGATGGGCAAGAGGATGATGAAATACTTCCAGGTTTCCCATCTTTTGCAAAT
TCTGTACAAAATTTTAAGAGAGAAGACAGAGTAATTTTTAAGGAAATGAAAGTTTGGATAGAACAATTTG
AGAGAGATTTGACAAGAGCACAGATGGTGGAATCAAATTTACAGGATAAATATCAGTCATTTAAGCACTT
CAGAGTTCAATATGAAATGAAGAGGAAACAGATTGAACATTTAATACAACCATTACACAGAGACGGTAAA
TTGTCACTTGACCAAGCATTGGTAAAACAATCTTGGGATAGAGTGACCTCCAGGCTCTTTGACTGGCATA
TACAGCTTGATAAATCTCTTCCTGCACCTCTGGGCACCATAGGTGCCTGGCTGTACAGAGCGGAGGTGGC
CCTGAGAGAGGAAATAACCGTTCAACAGGTCCACGAGGAAACAGCAAACACGATACAACGGAAACTTGAG
CAACATAAGGATCTGCTTCAAAACACGGATGCCCACAAAAGAGCATTCCATGAAATCTACCGGACCAGGT
CTGTTAACGGGATTCCAGTGCCACCTGATCAATTAGAGGACATGGCCGAGAGGTTTCATTTTGTTTCCTC
CACATCAGAGCTACACCTAATGAAAATGGAATTTTTAGAATTAAAGTACCGTCTGCTCTCACTGCTGGTT
CTTGCAGAGTCAAAGCTGAAGTCTTGGATCATTAAGTACGGGAGGAGAGAGTCAGTGGAGCAGCTTCTAC
AAAACTACGTGTCTTTTATAGAAAATAGCAAGTTCTTTGAACAATATGAGGTGACATACCAGATCTTGAA
ACAGACAGCTGAGATGTATGTCAAAGCAGATGGTTCAGTGGAAGAAGCTGAGAATGTGATGAAATTCATG
AATGAAACCACCGCTCAGTGGAGGAATCTCTCAGTAGAAGTGAGGAGTGTGAGGAGCATGCTGGAAGAAG
TGATCTCTAACTGGGATCGCTATGGCAATACAGTGGCTAGTCTGCAAGCCTGGCTAGAGGATGCTGAAAA
AATGCTCAATCAATCAGAAAATGCCAAAAAGGATTTTTTTCGAAATTTACCTCATTGGATTCAGCAGCAT
ACTGCCATGAACGATGCTGGCAATTTTCTAATTGAAACCTGTGATGAGATGGTTTCCCGTGACCTGAAGC
AGCAATTACTGTTGCTAAATGGGCGGTGGAGGGAGTTGTTTATGGAAGTCAAGCAATATGCTCAAGCTGA
TGAGATGGACAGAATGAAGAAGGAATACACAGACTGTGTTGTTACCCTGTCTGCTTTTGCAACGGAAGCC
CATAAGAAACTTTCTGAACCCTTAGAAGTCTCTTTTATGAATGTCAAGCTATTAATTCAAGACTTGGAGG
ATATTGAGCAGAGGGTGCCTGTGATGGATGCCCAATACAAGATAATTACAAAGACAGCACACCTCATTAC
CAAAGAAAGCCCCC

Human SYNE1 mRNA sequence - var2 (public gi: 22382201) (SEQ ID NO: 184)
AGCGGCTGCCTCCTTGTTGAGTGCTGCAAAGGCCTGGAATTCATTTATGACAGAATAGATCTAGAAAAGT
CCAAGCATGTTTTCTAGAGTGGTGTAGCCCTGTGCTGCCTCCAGTGAAGAGTCTCTTGGTGTTGGCTTCG
TGCTTCCGGAGGGACCATGGCAACCTCCAGAGGGGCCTCCCGGTGTCCTCGGGATATCGCCAATGTGATG
CAGAGGCTGCAAGATGAGCAAGAGATAGTACAAAAACGAACTTTCACAAAATGGATCAACTCTCATCTGG
CCAAGCGGAAACCTCCAATGGTGGTGGACGATCTTTTTGAAGACATGAAAGATGGTGTTAAACTGCTTGC
CCTTCTGGAGGTCCTGTCTGGGCAGAAACTGCCTTGTGAACAAGGACGCCGGATGAAGCGAATCCATGCT
GTGGCTAACATTGGCACGGCACTCAAGTTCCTCGAAGGAAGAAAGATTAAATTAGTCAACATTAACTCCA
CCGATATAGCTGATGGCCGACCCTCAATAGTTCTTGGATTGATGTGGACCATTATTCTATATTTCCAGAT

Figure 36 part - 98

TGAAGAGTTGACCAGCAACCTGCCCCAGCTCCAGTCTTTGTCCAGCAGCGCATCCTCCGTGGACAGCATA
GTTAGCTCTGAGACTCCCAGCCAACCAAGTAAACGGAAGGTGACCACCAAGATCCAAGGAAATGCTAAGA
AGGCTTTATTAAAGTGGGTTCAGTACACAGCTGGCAAGCAGACTGGAATAGAAGTAAAAGATTTTGGGAA
GAGTTGGAGAAGCGGGGTTGCCTTTCATTCAGTTATTCATGCCATTCGACCGGAATTGGTGGACTTGGAG
ACAGTGAAAGGCAGATCCAACCGAGAAAATTTGGAGGATGCTTTCACTATCGCCGAAACAGAACTGGGGA
TCCCAAGACTGCTAGATCCTGAAGACGTTGATGTGGATAAACCAGATGAGAAATCTATTATGACATATGT
AGCCCAGTTTCTGAAACATTATCCTGACATCCACAATGCAAGCACTGATGGGCAAGAGGATGATGAAATA
CTTCCAGGTTTCCCATCTTTTGCAAATTCTGTACAAAATTTTAAGAGAGAAGACAGAGTAATTTTTAAGG
AAATGAAAGTTTGGATAGAACAATTTGAGAGAGATTTGACAAGAGCACAGATGGTGGAATCAAATTTACA
GGATAAATATCAGTCATTTAAGCACTTCAGAGTTCAATATGAAATGAAGAGGAAACAGATTGAACATTTA
ATACAACCATTACACAGAGACGGTAAATTGTCACTTGACCAAGCATTGGTAAAACAATCTTGGGATAGAG
TGACCTCCAGGCTCTTTGACTGGCATATACAGCTTGATAAATCTCTTCCTGCACCTCTGGGCACCATAGG
TGCCTGGCTGTACAGAGCGGAGGTGGCCCTGAGAGAGGAAATAACCGTTCAACAGGTCCACGAGGAAACA
GCAAACACGATACAACGGAAACTTGAGCAACATAAGGATCTGCTTCAAAACACGGATGCCCACAAAAGAG
CATTCCATGAAATCTACCGGACCAGGTCTGTTAACGGGATTCCAGTGCCACCTGATCAATTAGAGGACAT
GGCCGAGAGGTTTCATTTTGTTTCCTCCACATCAGAGCTACACCTAATGAAAATGGAATTTTTAGAATTA
AAGTACCGTCTGCTATCACTGCTGTTCTTGCAGAGTCAAAGCTGAAGTCTTGGATCATTAAGTACGGGAG
GAGAGAGTCAGTGGAGCAGCTTCTACAAAACTACGTGTCTTTTATAGAAAATAGCAAGTTCTTTGAACAA
TATGAGGTGACATACCAGATCTTGAAACAGACAGCTGAGATGTATGTCAAAGCAGATGGTTCAGTGGAAG
AAGCTGAGAATGTGATGAAATTCATGAATGAAACCACCGCTCAGTGGAGGAATCTCTCAGTAGAAGTGAG
GAGTGTGAGGAGCATGCTGGAAGAAGTGATCTCTAACTGGGATCGCTATGGCAATACAGTGGCTAGTCTG
CAAGCCTGGCTAGAGGATGCTGAAAAAATGCTCAATCAATCAGAAAATGCCAAAAAGGATTTTTTTCGAA
ATTTACCTCATTGGATTCAGCAGCATACTGCCATGAACGATGCTGGCAATTTTCTAATTGAAACCTGTGA
TGAGATGGTTTCCCGTGACCTGAAGCAGCAATTACTGTTGCTAAATGGGCGGTGGAGGGAGTTGTTTATG
GAAGTCAAGCAATATGCTCAAGCTGATGAGATGGACAGAATGAAGAAGGAATACACAGACTGTGTTGTTA
CCCTGTCTGCTTTTGCAACGGAAGCCCATAAGAAACTTTCTGAACCCTTAGAAGTCTCTTTTATGAATGT
CAAGCTATTAATTCAAGACTTGGAGGTGAGGGGTTTCTGAATCAAAATGAAAAGCCTACTCTGTTGTGAG
AGGAAAGATCAGCAAGTTTATTCAGATCATTGCAAAAGCTGTTTCTGTGTCTCCTGGGCATCATTTTGAC
ATGTCTGTATGTCCCAATTTGCACCTGTCAGAAAAAAATGTATTGAACATAAAAAAGACATGACTTGATC
ATATAAAGTAACTTCAAATTGTTAAAAAAAAAAAAAAGAAAAAAAAAAAA

Human SYNE1 mRNA sequence - var3 (public gi: 28192627) (SEQ ID NO: 185)

AGTACGCGGGAGTCTTAAAACGGAAGAAGAAAAAGAAGCAGTTCAGTCTTTGGGAGAGCTGCCTCCTTGT
TGAGTGCTGCAAAGGCCTGGAATTCATTTATGACAGAATAGATCTAGAAAAGTCCAAGCATGTTTTCTAG
AGTGGTGTAGCCCTGTGCTGCCTCCAGTGAAGAGTCTCTTGGTGTTGGCTTCGTGCTTCCGGAGGGACCA
TGGCAACCTCCAGAGGGGCCTCCCGGTGTCCTCGGGATATCGCCAATGTGATGCAGAGGCTGCAAGATGA
GCAAGAGATAGTACAAAAACGAACTTTCACAAAATGGATCAACTCTCATCTGGCCAAGCGGAAACCTCCA
ATGGTGGTGGACGATCTTTTTGAAGACATGAAAGATGGTGTTAAACTGCTTGCCCTTCTGGAGGTCCTGT
CTGGGCAGAAACTGCCTTGTGAACAAGGACGCCGGATGAAGCGAATCCATGCTGTGGCTAACATTGGCAC
GGCACTCAAGTTCCTCGAAGGAAGAAAGATTAAATTAGTCAACATTAACTCCACCGATATAGCTGACGGC
CGACCCTCAATAGTTCTTGGATTGATGTGGACCATTATTCTATATTTCCAGATTGAAGAGTTGACCAGCA
ACCTGCCCCAGCTCCAGTCTTTGTCCAGCAGCGCATCCTCCGTGGACAGCATAGTTAGCTCTGAGACTCC
CAGCCCACCAAGTAAACGGAAGGTGACCACCAAGATCCAAGGAAATGCTAAGAAGGCTTTATTAAAGTGG
GTTCAGTACACAGCTGGCAAGCAGACTGGAATAGAAGTAAAAGATTTTGGGAAGAGTTGGAGAAGCGGGG
TTGCCTTTCATTCAGTTATTCATGCCATTCGACCGGAATTGGTGGACTTGGAGACAGTGAAAGGCAGATC
CAACCGAGAAAATTTGGAGGATGCTTTCACTATCGCCGAAACAGAACTGGGGATCCCAAGACTGCTAGAT
CCTGAAGACGTTGATGTGGATAAACCAGATGAGAAATCTATTATGACCTATGTAGCCCAGTTTCTGAAAC
ATTATCCTGACATCCACAATGCAAGCACTGATGGGCAAGAGGATGATGAAATACTTCCAGGTTTCCCATC
TTTTGCAAATTCTGTACAAAATTTTAAGAGAGAAGACAGAGTAATTTTTAAGGAAATGAAAGTTTGGATA
GAACAATTTGAGAGAGATTTGACAAGAGCACAGATGGTGGAATCAAATTTACAGGATAAATATCAGTCAT
TTAAGCACTTCAGAGTTCAATATGAAATGAAGAGGAAACAGATTGAACATTTAATACAACCATTACACAG
AGACGGTAAATTGTCACTTGACCAAGCATTGGTAAAACAATCTTGGGATAGAGTGACCTCCAGGCTCTTT
GACTGGCATATACAGCTTGATAAATCTCTTCCTGCACCTCTGGGCACCATAGGTGCCTGGCTGTACAGAG
CGGAGGTGGCCCTGAGAGAGGAAATAACCGTTCAACAGGTCCACGAGGAAACAGCAAACACGATACAACG
GAAACTTGAGCAACATAAG

Human SYNE1 mRNA sequence - var4 (public gi: 21734187) (SEQ ID NO: 186)

GGGACACAGTGAGAAACCACTGTATGAAGTGTTTGGGGCTCAGATGGCAGTGTGGTGGCAGGACACACAA
GCAGGGGCAACAAAGCCGGAGTCCTGGGAGAGACTTCGGGAAAGAAACCATGGAGCAGAGTCCAGAGGGT
GAATCGCAGTTGGTCAGGTGGGCTCGGAAGTGCTTAGAGGAAGAAAGGAGGGGAAGCCTCCCTGCTTTGT
GATTGGCCTGGTGCTTTTGATCATTGGCAGTTTGTCTGGAATGACAGGCATGGAATGGACAAAGTGGAGA
AGAGCCTGGCTGTGAAGCAGCCTGTTCACCATGGAAAAGAGCTGTGGCTCCTATCCTGAAGGTCGTGGAG

Figure 36 part - 99

CCACAGCAGGATCTGCGGAGGGAGGTGCTGGGATCCTCCCTCCTCAGGGATGTGCAGATTTTCATATTGT
ATCTTTCTGGATACCACAGGGAGAAGGGCATATTCGGCGGAGAGAGACCAAATGAAACCTTTTACAACCT
CAGACAGAAGTAGGGTGGTGGCCTAAACTAGGGGAAGCAGAATTGGGAATGGGGAGAATGGGAATGATGT
GAGAAATCACATAGAGAAGACTCCTCCAGAACTCTCAGTCCATTGAACTGGGATGGAGGCGATTTTCTGG
GCTGGGCATCTTGGTGAAAGATGCAGGTGGTCCTAGGCCCTGAGGACCACAAGAGGGAAGGAGCACTGTG
GGTGCAGGTGGGCAAGGGAGGTGGGGCTGTGAGAGCAGGGAGGGGATGAGTTTGCTTGTGTGCATCCTGA
TCTTGAGATACCTGCAGAATATCCAAATGCAAAAGTCCAGTCGTAGATGCACGGTGTGAAGTGCAGAAGC
CAGAAATGCAGATTGGGTAGGTATTCACATGTAAATGGCAATGGTCCTGGAGTGAACGGAGGAGCTCCCA
CAGGAAGAGTGTGTGAAGGAAAACAAGAAGGACCACCACCCAAGCCACACATGCAGTGAAGGGATGGACA
GAGAAACAGAAACTCTGTAAGGAAGGTGAATAAAAATAGAATAAAGAGTTGGAGGCTGATTTGTGGCACT
TGGAAATGTATCTCATACATTCTGTCAAAGGACATCTGGGGAATTTCTGTTTGGTTCTGGTGGTTCACAT
CAGATTCCCAAGGGATGACACTGTTCTAAAAAGAAAATGATTTCTCTCATTTCTATTTTGTCTTTACAGT
AAGGCCTATTAGTCAGGCATATGGCATCTGAAGCAGAGCTGTCCAAAACCAGCCACTGGCCAGTTGGGAC
TGTTGAGCTCTGAGATGGGACTGTGCAAATTGAGATGGGTTGTGCGTGGAAAACATGCTTACATGAATTT
CAAAGACTTAGTACAAGAAAGAAAATAAAATATTAATAATTATATTGATTACATGTTATAATCCCTGTCT
AATGTAGTGTTAAAATTAATTTTATAAGTTTCTTTTTACATTTCTAATGTGGCTACGAAACCTTTAAGAT
TACATATATAGTTCACATAGAAATATATGGGACAGCGCTGCTCTGGAGTCTGGGCTGAAATCTCAGTTCT
GCCATGTACTTTCTGTTTAAACTTAGATAAGGAACCTAATTCCTCTGTGCCTCAGTTTTCTCATCTATAA
AATGGGAATAACATTCCCAGGTACCCTATAGGGTTTCTATGTGATAAATTTGTGCTCAGACCAGAGCCTG
GCTCATAAAAACACTCTCAGTCACTGTGAGTTCTTTTTTTTTTTTTTTTTTTTTTTTTTTTGAGACGA
AGTCTAGTTCTGTTGCCCAGGCTGGAGTGCAGTGGCACAATCTCGGCTCACTGCAACCTCCGCCTCCCCG
GTTCAAGCGATCCTCCTGCCTCAGCCTCCCATGTAGCTGGGATTACAGGTACCTGTCACCACACCTGGCT
AATTTTTGTATTTTTAGTAGAGATGGGGTTCCACCATGTCGGCCAGGCTGGTCTCGAATTCCTGACCTCA
GGTGATCCACCCGCCTTGGCCTCCCAAAGTGCTGGGATTACAGGCGTGAGCCACCACGCCCCACCCACTG
TGAATTCTTATGATTCATTTCAGGAAAGCTTTGGTGAGCCTGCACGCTCCTCTGTGCGCTCAGGAGCTAT
GTGTCTAGAATAACTGACTTCCTTTTTTTTCCCCTAGGAAAGTTATTTTCCTGCACAAGGGATTCAGGGT
TTCCAGAACTTAGCTGTCAACTTAGACTGTGCTTTTTTTGCAGATGTAATGATCCCCGAGAGCCCTGAGG
CCTATGTAAAACTCACAGAAAATGCAATCAAAAATACCTCCGGTAGGCACAACAAGCCGGAGCCAGCCTC
CCTCCCTCCCCCGTAGAGCAATCCTCCTCTCTTAGCACATCTGCTGTCTCTCTCCCAGCTTTGTGGCTCT
AGCATGTTAAGGCACAGCCTTCCTCTCTTACTGCTGTACTAGAAAAAACAGCTGGTTAAATCCACACCGA
GAATAAGATTTCACTAATCGAGCGAAATAAAATAACTTCTCAACTTGTTAAATGGTGATTGGTCTCATTA
GGTATAGACCTCTCATGTCCATTAACTGCAGAAAATATGAGAAGGAAAACCCAGTCATCAGCCTCTGCGC
CCTAGTGTTCTACGTGGTGTGGTAATTTCAGCTTCACTGCATGCAGACCTACCTGTGGCTGGAGACTCAG
GGTGCAGGCTCTGGTCCCAAGTCCGCCAGCCTGCATGAGTGACCTTTGGCCCATCCACCACTTTATCCTC
CTCATCTCAAGAATCCCGTATGAGACAAGGGGTGAGATCAGATTTCAGCTCTAAAAAATATATGTAATTT
TAATTTAAGAGGTCGTAAAAGATAATTTGAAATGAAAAATGTATTTCACGGTATGCTGAGCCATAGATAA
GAACAGAACTATTCCTGAAACAAGAAGAATTAAAGAAAGAAAAATGGAACTAGTTTTGCTTAGTGTTGTG
TTAGACAAACTGTAGTGCAGGAGTTCAGGATCAGTGATGTGGGATGTCGGCGGGGAATAGAGTTTGAACG
CAGTGATATGATATTGAATCACGGAGTTACTAGTTTACGCTTCAGTTTTTGAAGAAAATCAAAAGGACAG
AAAGCAAAGTAACATTACTGAGAGGGTGATTCCCAGGGAGGGACCTCTCCTAGGTGTATCTAGAAGGCCT
TTTTTTAGAAACAAATAAAAACATTTAATAAAGCTTACTAATATTTGTTCTGCTTTCACCCCATGCTAGC
TTCACTGATGATCAAATGTTCCTGTGTAGTTCGAAGACTTTGACACACACACACACACACACACACACAC
TCAGTAATTTTACAAAGAAATGTTACAACTTTGAGAGGAGAATGAGCCAGAATTCTAGGCTATGAGTAAG
AACCTGCCTAGATGGAAATGTTAAAATCTTAGCTTTCTCCTGGTTTTGTTTCAGATCTTAGATAAAAAGC
AAGTCGTTGCTAGTTTGATATCTCTGTATATATCTATTCTGAGGCACTCTTTTCTTGATTAATGAATTTA
TGCCTTCAGTAAATGATGCAGCAACCTGAGCCTTCCGTGACACTATCTTCCCCTGAGGTGCATGAAGAAA
AATCAGAGGGAGGATCTTCCCCTGCTCACTAAGCGATAGCAGAAAGAACATGAGAAAAAGAACAGCTTTC
TCCTTACTGAGATGCAGTAGACACCATTGCAGATTTTTAGAAAGGCCTTCCACACTGACAACATTCAGAT
GATCAGGGGTTCAGCTGGAAGAGGGTCAGGTGCACGAAGCTGTTCAAAACGGACTGGAGAGCCGTTTTGC
GACGTCCGATCTGCTAGGGCTCTCAGTCAAGCACCTTCATTGGTTTGGCCATTTTAATGTCTAACCCACC
GGCACGATGGTACTAAATTTGCTTTGTAATTACCCACACCTGCCATTTCTATGCTGCTGTAACTGAAATC
ATTTCTGAAACTTCTCCTTGAATATCAAGCTTTAAATAAGTCAAATAGTTTGTCCAGTAAAGATTCTTAT
GGTTGCCACCGCAGGGGACCACAGTGCCCTAGAGTCACAGATCCGACAACTGGGCAAAGCCCTGGATGAT
AGCCGCTTTCAGATACAGCAAACCGAAAATATCATTCGCAGCAAAACTCCCACGGGGCCGGAGCTAGACA
CCAGCTACAAAGGCTACATGAAACTGCTGGGCGAATGCAGTAGCAGTATAGACTCCGTGAAGAGACTGGA
GCACAAACTGAAGGAGGAAGAGGAGAGCCTTCCTGGCTTTGTTAACCTGCATAGTACCGAAACCCAAACG
GCTGGTGTGATTGACCGATGGGAGCTTCTCCAGGCCCAGGCATTGAGCAAGGAGTTGAGGATGAAGCAGA
ACCTCCAGAAGTGGCAGCAGTTTAACTCAGACTTGAACAGCATCTGGGCCTGGCTGGGGGACACGGAGGA
GGAGTTGGAACAGCTCCAGCGTCTGGAACTCAGCACTGACATCCAGACCATCGAGCTCCAGATCAAAAAG
CTCAAGGAGCTCCAGAAAGCTGTGGACCACCGCAAAGCCATCATCCTCTCCATCAATCTCTGCAGCCCTG
AGTTCACCCGGGCTGACAGCAAGGAGAGCCGGGACCTGCAGGATCGCTTGTCGCAGATGAATGGGCGCTG
GGACCGAGTGTGCTCTCTGCTGGAGGAGTGGCGGGGCCTGCTGCAGGATGCCCTGATGCAGTGCCAGGGT
TTCCATGAAATGAGCCATGGTTTGCTTCTTATGCTGGAGAACATTGACAGAAGGAAAAATGAAATTGTCC

Figure 36 part - 100

CTATTGATTCTAACCTTGATGCAGAGATACTTCAGGACCATCACAAACAGCTTATGGTAAGATGTGTGAA
CTCTGGCAGCCTCCAGTTATTTTTAGCAGGGTTGCATTTCATTTACAGAAAATGAATATAAGTGGTAAGT
GTTGTTTCTTTTTTTTTAACTTTTTGCATTATAGTCTCTACTTTACACTTTTTTAACTCCCTGTGGTTTC
CAATCTTTGTAAAGCAAACATGTGCATAGAAGATGATATCTGCTAGCTTTAGAATCTGATTCTAAAGTTG
TTGCTCAGTTGTAAAAATCTTAGTGTTCTCAAGCAATCTTAATTAGCTTGTGTTGTTTATTAAGGCAGCT
TAATTTAAACTTCATGTTACATCTATGGCCCAAAAGTATATTTGGTGGCTTGTAGTAAAAGGTCATTAAA
ATATTAGAATAGAATGAGACAATTAAGTCTTTTGTTTGTTTTTGTTGTCGTTGTTTTTTGAGACAGAGTC
TCACTCTGTTGCCCAGGGTGGAGTGCAGTGGTGCGATCTCGGCTCACTGCAATCTCCGCCTCCGGGATTC
GAGCAATTCTCCTGCCAATTCTCCTGCCTCACCCTCCCGAGTAGGTGGGACTACAGGTGTAAGCCACCAC
GCCTCGCTAATGTTTGTATTTTTAGTAGAGACAGGGTTTCACCATGTTGGCCAGGCTGGTCTCGAACTCC
TGGCCGCAGGTGATCCACCTGCCTCAGCCTCCCAAAGTGCTGGGATTACAGGCATGAGCCACCACACCCA
GCCGAGTCTTTCAAAGAGGAATTAAATACATCAGATTAAACATGAACCTGAGCATCAAGTTTTCTGAAAG
CCAAGACAAAATGGGAAACAAGGAGTAAACTTACTTTCATTATCTGGCAAAAACAAAACATACCACTTCT
CAAGGAAGGAGAAACTTTTTCTAGCACTAAATTCAAGAGGAAATTAACTGGTAGACTCTTATACAAGGAT
CTTTGGACAATATAATGTACAGTATATTTAAGTGACTTTATAGAAGATAAGGAAGCATATTTGAGTTCCA
TTAGAAGAAAATATTATGCACTTTGTAGCTCTCTGTATTTTTAAAATGTTATGTCTTAACATTTAACACT
CACCTAAACTACAGAATTGGTACCTTTTAATTCAGTACCATAATAGTCTTAGAAACCTAGAGGAAATAGC
TGTGGAACTGCATTTTTACTTCACTTTGACCTCTGGCATCAAGCTGTGAATGACGAATCACCCCTTTTTT
TTTTCAAATCTTGACTAGATATCAGAGGATACCTAGACATACTTCTGCTTCGCTATATTTAATGTTGTGC
TTTTCTGTTTAAAAGATTATCTTACATCTCACTTGCATACTAATCTATATTTTAATTACTGTCATATATA
CATTAACTAATTTGAACCTTCCAATAATACTGTGGACCAGGCATCAAATCAAACTGAGATCAGAGACGGT
CAGGGGTCTTATAGAATATTTTTGGCAGAGGCAGGATTAGAACTCAGGCCGTGAGCTGCTGCATCCTTTA
GTGTGTGAGCTCCACGTTTGATGCTCAGGTATAATTTCCCACCAAGTTAAGTTGATTGCATTCTGCACTT
TTGGAGCTTTTGCCAATTATCAAAAATGCTTAGAAAAATTAATTTGTTTTTGTATGCATAGCAAATAAAG
CATGAGCTGTTGGAATCCCAACTCAGAGTAGCCTCTTTGCAAGACATGTCTTGCCAACTACTGGTGAATG
CTGAAGGAACAGACTGTTTAGAAGCCAAAGAAAAAGTCCATGTTATTGGAAATCGGCTCAAACTTCTCTT
GAAGGAGGTCAGTCGTCATATCAAGGAACTGGAGAAGTTATTAGACGTGTCAAGTAGTCAGCAGGATTTG
TCTTCCTGGTCTTCTGCTGATGAACTGGACACCTCAGGGTCTGTGAGTCCCACATCAGGAAGGAGCACCC
CAAACAGACAGAAAACGCCACGAGGCAAGTGTAGTCTCTCACAGCCCGGACCCTCTGTCAGCAGTCCACA
TAGCAGGTCCACAAAAGGTGGCTCCGATTCCTCCCTTTCTGAGCCAGGGCCAGGTCGGTCCGGCCGCGGC
TTCCTGTTCAGAGTCCTCCGAGCAGCTCTTCCCCTTCAGCTTCTCCTGCTCCTCCTCATCGGGCTTGCCT
GCCTTGTACCGATGTCAGAGGAAGACTACAGCTGTGCCCTCTCCAACAACTTTGCCCGGTCATTCCACCC
CATGCTCAGATACACGAATGGCCCTCCTCCACTCTGAACTAAGCAGATGCCATCTGCAGAAGTGCTGGTA
GCATAAGGAGGATCGGGTCATAAGCAATCCCAAACTACCAACAAGAGGACCTTGATCTTGGCGAAAGCCC
TCGGTGTGGCAGCTTTAGCCCTCCTCCAGATCACATGTGTGCAAATTATGGCTTCAGAGGTGGAAGATAA
ACAGTGACGGGGGAACAAACAGACAACAAGAAGGTTTGGAAGAAATCTGGTTTGAGACTCTGAACCTTAG
CACTAAGGAGATTGAGTAAGGACCTCCAAAGTTCCCCGGACTCATGAATTCTGGGCCCTTGGCCCATTCT
GTGCACAGCCAAGGACTTCAGTAGACCATCTGGGCAGCTTTCCCATGGTGCTGCTCCAACCATCAGATAA
ATGACCCTCCCAAGCACCATGTCAGTGTCGTACAATCTACCAACCAACCAGTGCTGAAGAGATTTTAGAA
CCTTGTAACATACAATTTTTAAGAGCTTATATGGCAGCTTCCTTTTTACCTTGTTTTCCTTTGGGGCATG
ATGTTTTAACCTTTGCTTTAGAAGCACAAGCTGTAAATCTAAAAGGCACTTTTTTTTAGAGGTATAAAGA
AAAACTAGACGTAATAAATAAGATCATGGAAGGCTTTATGTGAAAAAAGTTGAATGTTATAGTAAAAAAA
AAAGATATTTATGTATGTACAGTTTGCTAAAGCCAAGTTTTGTTTGTATTGATTTCTTTGCATTTATTAT
AGATATTATAAAATAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

Human SYNE1 mRNA sequence - var5 (public gi: 21734305) (SEQ ID NO: 187)

CACTGGCACGACCGCTCTGCAGACAGCCTGCTTTCTCCACAGCCTTCCTCCAATCTCTCCCTCTCGCTCG
CTCAGCCCCTCCGGAGCGAGCGGTCAGGACGAGACACCCCAGCTAGTGTGGACTCCATCCCCCTGGAGTG
GGATCACGACTATGACCTCAGTCGGGACCTGGAGTCTGCAATGTCCAGAGCTCTGCCCTCTGAGGATGAA
GAAGGTCAGGATGACAAAGATTTCTACCTCCGGGGAGCTGTTGCCTTATCAGATGTAATGATCCCCGAGA
GCCCTGAGGCCTATGTAAAACTCACAGAAAATGCAATCAAAAATACCTCCGGGGACCACAGTGCCCTAGA
GTCACAGATCCGACAACTGGGCAAAGCCCTGGATGATAGCCGCTTTCAGATACAGCAAACCGAAAATATC
ATTCGCAGCAAAACTCCCACGGGGCCGGAGCTAGACACCAGCTACAAAGGCTACATGAAACTGCTGGGCG
AATGCAGTAGCAGTATAGACTCCGTGAAGAGACTGGAGCACAAACTGAAGGAGGAAGAGGAGAGCCTTCC
TGGCTTTGTTAACCTGCATAGTACCGAAACCCAAACGGCTGGTGTGATTGACCGATGGGAGCTTCTCCAG
GCCCAGGCATTGAGCAAGGAGTTGAGGATGAAGCAGAACCTCCAGAAGTGGCAGCAGTTTAACTCAGACT
TGAACAGCATCTGGGCCTGGCTGGGGGACACGGAGGAGGAGTTGGAACAGCTCCAGCGTCTGGAACTCAG
CACTGACATCCAGACCATCGAGCTCCAGATCAAAAAGCTCAAGGAGCTCCAGAAAGCTGTGGACCACCGC
AAAGCCATCATCCTCTCCATCAATCTCTGCAGCCCTGAGTTCACCCAGGCTGACAGCAAGGAGAGCCGGG
ACCTGCAGGATCGCTTGTCGCAGATGAATGGGCGCTGGGACCGAGTGTGCTCTCTGCTGGAGGAGTGGCG
GGGCCTGCTGCAGGATGCCCTGATGCAGTGCCAGGGTTTCCATGAAATGAGCCATGGTTTGCTTCTTATG
CTGGAGAACATTGACAGAAGGAAAAATGAAATTGTCCCTATTGATTCTAACCTTGATGCAGAGATACTTC
AGGACCATCACAAACAGCTTATGCAAATAAAGCATGAGCTGTTGGAATCCCAACTCAGAGTAGCCTCTTT

Figure 36 part - 101

GCAAGACATGTCTTGCCAACTACTGGTGAATGCTGAAGGAACAGACTGTTTAGAAGCCAAAGAAAAAGTC
CATGTTATTGGAAATCGGCTCAAACTTCTCTTGAAGGAGGTCAGTCGTCATATCAAGGAACTGGAGAAGT
TATTAGACGTGTCAAGTAGTCAGCAGGATTTGTCTTCCTGGTCTTCTGCTGATGAACTGGACACCTCAGG
GTCTGTGAGTCCCACATCAGGAAGGAGCACCCCAAACAGACAGAAAACGCCACGAGGCAAGTGTAGTCTC
TCACAGCCTGGACCCTCTGTCAGCAGTCCACATAGCAGGTCCACAAAAGGTGGCTCCGATTCCTCCCTTT
CTGAGCCAGGGCCAGGTCGGTCCGGCCGCGGCTTCCTGTTCAGAGTCCTCCGAGCAGCTCTTCCCCTTCA
GCTTCTCCTGCTCCTCCTCATCGGGCTTGCCTGCCTTGTACCAATGTCAGAGGAAGACTACAGCTGTGCC
CTCTCCAACAACTTTGCCCGGTCATTCCACCCCATGCTCAGATACACGAATGGCCCTCCTCCACTCTGAA
CTAAGCAGATGCCATCTGCAGAAGTGCTGGTAGCATAAGGAGGATCGGGTCATAAGCAATCCCAAACTAC
CAACAAGAGGACCTTGATCTTGGCGAAAGCCATCGGTGTGGCAGCTTTAGCCCTCCTCCAGATCACATGT
GTGCAAATTATGGCTTCAGAGGTGGAAGATAAACAGTGACGGGGGAACAAACAGACAACAAGAAGGTTTG
GAAGAAATCTGGTTTGAGACTCTGAACCTTAGCACTAAGGAGATTGAGTAAGGACCTCCAAAGTTCCCCG
GACTCATGAATTCTGGGCCCTTGGCCCATTCTGTGCACAGCCAAGGACTTCAGTAGACCATCTGGGCAGC
TTTCCCATGGTGCTGCTCCAACCATCAGATAAATGACCCTCCCAAGCACCATGTCAGTGTCGTACAATCT
ACCAACCAACCAGTGCTGAAGAGATTTTAGAACCTTGTAACATACAATTTTTAAGAGCTTATATGGCAGC
TTCCTTTTTACCTTGTTTTCCTTTGGGGCATGATGTTTTAACCTTTGCTTTAGAAGCACAAGCTGTAAAT
CTAAAAGGCACTTTTTTTTAGAGGTATAAAGAAAAACTAGATGTAATAAATAAGATCATGGAAGGCTTTA
TGTGAAAAAAGTTGAATGTTATAGTAAAAAAAAAAAGATATTTATGTATGTACAGTTTGCTAAAGCCAAG
TTTTGTTTGTATTGATTTCTTTGCATTTATTATAGATATTATAAAATAAAAAAAAAAAAAAAAAAAA

Human SYNE1 mRNA sequence - var6 (public gi: 21750070) (SEQ ID NO: 188)
TCAGAGGGTGCTCAATGCTTTCCTGAAAGCTTGTGATGAACTCACCGACATCCTTCCAGAGCAGGAGCAG
CAGGGGCTGCAGGAAGCTGTTCGAAAGCTCCACAAACAATGGAAGGATCTTCAAGGAGAAGCCCCTTATC
ATTTGCTTCATCTGAAGATTGATGTGGAGAAGAATAGGTTCTTAGCCTCTGCAGAAGAATGCAGAACTGA
GCTGGATCGAGAGACCAAGCTGATGCCCCAGGAAGGCAGTGAAAAGATAATTAAAGAGCACAGGGTTTTC
TTCAGTGACAAAGGTCCTCATCATCTCTGTGAGAAAAGGTTACAGCTCATCGAGGAACTCTGTGTGAAAC
TCCCAGTGCGGGACCCAGTAAGGGACACACCTGGAACCTGTCACGTGACTCTCAAAGAGCTCAGAGCTGC
CATTGACAGCACCTACAGGAAGCTCATGGAAGACCCAGACAAGTGGAAGGACTACACTAGCAGATTCTCT
GAGTTCTCATCTTGGATATCTACAAATGAGACACAATTAAAGGGGATCAAGGGTGAGGCCATCGATACTG
CCAACCACGGAGAGGTTAAACGTGCCGTTGAAGAGATCAGAAATGGTGTTACCAAAAGGGGTGAGACCCT
CAGCTGGCTGAAATCCAGGCTGAAAGTTTTGACAGAAGTTTCTTCTGAGAATGAAGCCCAAAAGCAGGGA
GATGAGCTGGCAAAATTATCCAGCTCTTTCAAGGCTCTTGTGACGCTGCTGTCAGAGGTTGAAAAGATGC
TAAGCAATTTTGGGGACTGTGTCCAGTACAAAGAAATAGTCAAAAATTCTCTCGAAGAATTAATTTCTGG
CTCTAAAGAAGTCCAGGAACAAGCTGAGAAGATCTTGGATACTGAAAATCTGTTTGAAGCACAGCAGTTA
CTTCTTCATCACCAGCAAAAGACAAAGCGGATCTCAGCAAAGAAGAGAGATGTGCAGCAGCAGATCGCGC
AGGCGCAGCAGGGAGAAGGGGGGCTGCCTGACCGAGGCCACGAGGAGCTGCGGAAGCTGGAGAGCACACT
GGATGGCCTGGAGCGCAGCCGGGAGAGGCAGGAACGCCGCATCCAGGTCACATTAAGAAAATGGGAGCGA
TTTGAAACAAACAAAGAAACAGTAGTAAGATACCTTTTTCAAACAGGTTCCAGTCATGAACGCTTCTTGA
GTTTTAGCAGTTTGGAAAGTTTATCTTCAGAACTGGAACAAACAAAGGAGTTTTCTAAACGGACAGAAAG
TATTGCAGTCCAGGCTGAGAACCTTGTAAAGGAAGCTTCAGAGATACCGCTTGGGCCCCAAAATAAGCAG
CTGCTTCAACAGCAGGCCAAGTCAATCAAAGAACAAGTCAAAAAATTAGAAGACACGCTTGAAGAAGAGT
ATGTGATTGACAAGTCCTAAACTTTCTTCTCTGAGATAAAGTTTCATACAATCTTTCCTGTACCTTGTAT
TCAAAACACTCTTAAAATCTCAAAGTGTCTGTGTATTTCAGCATGTTTTGAGGAAACAACTCACAGTTCA
AAAGAAAGTATCGCTAATACAGAAACCAATATCTATAACAGAGCCCAAAAAATATAAAGGATGTGGGTTT
TGCATCTTAAACTGATCATGTTCATGAGAAAGCCATATCTATTCTATTCTGTGGCCTTTGTACATTGTAG
AGGGAATCTTGAAAAAGAACTAATATTTAAAATAATTTTTTTACTATATTATTCTGCTGTCACCATTTAG
AGCGAAAAGGAGATATTTTGTTAGTGTAGATTCCAGGCCTAAATACACATCACATAGACCATATATCTCC
AACCTGAAGAAGCTCCTGGAGCTTGTTTACAGTGCCTCGGTATTCAAGTTATCCTGACTAATATGCTCTT
TCCAGAAATTAACTTTAAAATATTTTATTTTTAAACTTTTAATGTTTGTTTATCTG

Human SYNE1 mRNA sequence - var7 (public gi: 28192521) (SEQ ID NO: 189)
CATATACAGCTTGATAAATCTCTTCCTGCACCTCTGGGCACCATAGGTGCCTGGCTGTACAGAGCGGAGG
TGGCCCTGAGAGAGGAAATAACCGTTCAACAGGTCCACGAGGAAACAGCAAACACGATACAACGGAAACT
TGAGCAACATAAGAGAAAATGCCGGACAATGATGGATCTGCTTCAAAACACGGATGCCCACAAAAGAGCA
TTCCATGAAATCTACCGGACCAGGTCTGTTAACGGGATTCCAGTGCCACCTGATCAATTAGAGGACATGG
CCGAGAGGTTTCATTTTGTTTCCCCCACATCAGAGCTACACCTAATGAAAATGGAATTTTTAGAATTAAA
GTACCGTCTGCTCTCACTGCTGGTTCTTGCAGAGTCAAAGCTGAAGTCTTGGATCATTAAGTACGGGAGG
AGAGAGTCAGTGGAGCAGCTTCTACAAAACTACGTGTCTTTTATAGAAAATAGCAAGTTCTTTGAACAAT
ATGAGGTGACATACCAGATCTTGAAACAGACAGCTGAGATGTATGTCAAAGCAGATGGTTCAGTGGAAGA
AGCTGAGAATGTGATGAAATTCATGAATGAAACCACCGCTCAGTGGAGGAATCTCTCAGTAGAAGTGAGG
AGTGTGAGGAGCATGCTGGAAGAAGTGATCTCTAACTGGGATCGCTATGGCAATACAGTGGCTAGTCTGC
AAGCCTGGCTAGAGGATGCTGAAAAAATGCTCAATCAATCAGAAAATGCCAAAAAGGATTTTTTTCGAAA

Figure 36 part - 102

TTTACCTCATTGGATTCAGCAGCATACTGCCATGAACGATGCTGGCAATTTTCTAATTGAAACCTGTGAT
GAGATGGTTTCCCGTGACCTGAAGCAGCAATTACTGTTGCTAAATGGGCGGTGGAGGGAGTTGTTTATGG
AAGTCAAGCAATATGCTCAAGCTGATGAGATGGACAGAATGAAGAAGGAATACACAGACTGTGTTGTTAC
CCTGTCTGCTTTTGCAACGGAAGCCCATAAGAAACTTTCTGAACCCTTAGAAGTCTCTTTTATGAATGTC
AAGCTATTAATTCAAGACTTGGAGGATATTGAGCAGAGGGTGCCTGTGATGGATGCCCAATACAAGATAA
TTACAAAGACAGCACACCTCATTACCAAAGAAAGCCCCCAAGAAGAAGGAAAAGAAATGTTTGCGACCAT
GTCAAAGCTCAAAGAGCAGCTAACCAAGGTCAAAGAATGTTACTCCCCACTCCTTTATGAGTCTCAGCAG
CTGTTGATTCCGTTGGAGGAATTAGAAAAGCAGATGACGTCCTTTTATGACTCACTTGGGAAAATCAATG
AAATTATCACAGTTCTTGAGCGTGAGGCACAATCGAGTGCCCTTTTTAAACAAAAACATCAGG

Human SYNE1 mRNA sequence - var8 (public gi: 19584384) (SEQ ID NO: 190)
AAGCTATTAATTCAAGACTTGGAGGATATTGAGCAGAGGGTGCCTGTGATGGATGCCCAATACAAGATAA
TTACAAAGACAGCACACCTCATTACCAAAGAAAGCCCCCAAGAAGAAGGAAAAGAAATGTTTGCGACCAT
GTCAAAGCTCAAAGAGCAGCTAACCAAGGTCAAAGAATGTTACTCCCCACTCCTTTATGAGTCTCAGCAG
CTGTTGATTCCGTTGGAGGAATTAGAAAAGCAGATGACGTCCTTTTATGACTCACTTGGGAAAATCAATG
AAATTATCACAGTTCTTGAGCGTGAGGCACAATCGAGTGCCCTTTTTAAACAAAAACATCAGGAACTGTT
AGCTTGTCAAGAAAACTGTAAGAAAACCTTGACACTTATTGAGAAAGGCAGTCAAAGTGTTCAAAAGTTT
GTGACCTTGAGCAACGTGTTAAAGCATTTTGATCAGACGAGGCTACAAAGACAGATTGCAGATATTCATG
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AAGGGGGATCCAGAGGAGCTCCTGCGGAGACACACTGAGTTTTTCAGTCAGCTGGATCAGAGGGTGCTCA
ATGCTTTCCTGAAAGCTTGTGATGAACTCACCGACATCCTTCCAGAGCAGGAGCAGCAGGGGCTGCAGGA
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ACAGGAAGCTCATGGAAGACCCAGACAAGTGGAAGGACTACACTAGCAGATTCTCTGAGTTCTCATCTTG
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GTTAAACGTGCCGTTGAAGAGATCAGAAATGGTGTTACCAAAAGGGGTGAGACCCTCAGCTGGCTGAAAT
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ATTATCCAGCTCTTTCAAGGCTCTTGTGACGCTGCTGTCAGAGGTTGAAAAGATGCTAAGCAATTTTGGG
GACTGTGTCCAGTACAAAGAAATAGTCAAAAATTCTCTCGAAGAATTAATTTCTGGCTCTAAAGAAGTCC
AGGAACAAGCTGAGAAGATCTTGGATACTGAAAATCTGTTTGAAGCACAGCAGTTACTTCTTCATCACCA
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GCAGCCGGGAGAGGCAGGAACGCCGCATCCAGGTCACATTAAGAAAATGGGAGCGATTTGAAACAAACAA
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AAAAAGAACTCAATGCCTTGGAAACTTCGTCATCTGCCATGGACATGCAAATCAGCCAAATTAAGGTCAC
AATTCAGGAAATAGAAAGTAAGCTCAGCAGCATTGTAGGATTAGAAGAAGAAGCCCAGTCTTTTGCTCAG
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TTCGAGAGCATGCACAGTGTCTGGAAGGAACAATCCTGGGACATTTATCTCAGCAGCAAAAGTTTGAAGA
GAACCTTAGAAAGATCCAGCAATCTGTGTCTGAATTTGAAGATAAACTTGCTGTTCCAATTAAAATATGT
TCTTCAGCTACAGAAACATACAAAGTTCTTCAAGAACATATGGATCTCTGCCAGGCCCTGGAGTCACTGA
GCAGCGCGATCACTGCCTTCTCAGCCAGTGCCAGGAAGGTTGTGAACAGAGATTCCTGTGTTCAGGAGGC
TGCGGCTCTACAGCAGCAATACGAGGACATCCTAAGGAGGGCGAAGGAGAGACAGACGGCGCTGGAGAAT
CTGCTGGCCCACTGGCAGAGGCTAGAGAAAGAACTATCATCCTTTTTGACCTGGTTAGAGCGGGGTGAAG
CTAAAGCCAGTTCCCCAGAAATGGACATTTCTGCAGACAGAGTCAAAGTGGAAGGTGAACTTCAGTTAAT
ACAGGCAAGTTCAAGGAAGTGTGAGGAAGGAAAAAATAAAATGCTTTTTGTTACAGTTACATTATTTAAA
ATAATAAAATAAATAAAACTTGTAAAAAAAAAAAAAAAAAAAAAAAA

Human SYNE1 mRNA sequence - var9 (public gi: 17861377) (SEQ ID NO: 191)
AAGGTAAAGCCACTAGAGAGAAACTGAAAGAAAACATTCTTAAGATAAATTGAATTGACATTTTCTCTCT
AAAATATGATTTATAGACCACAGATAGGAATTAAGAGTTTCCTGATAATTTTGGCTTCATATTATTTTAA
AGGATTATCAAGAGGAAATTGCTATTGCTCAAGAGAACAAAATACAGCTCCAACAAATGGGAGAACGACT
TGCTAAAGCCAGCCATGAAAGCAAAGCATCTGAGATTGAATACAAGCTGGGAAAGGTCAACGACCGGTGG
CAGCATCTCCTGGACCTCATTGCAGCCAGGGTGAAGAAGCTGAAGGAGACCCTGGTAGCCGTGCAGCAGC
TTGATAAGAACATGAGCAGCCTGAGGACCTGGCTCGCTCACATCGAGTCAGAGCTGGCCAAGCCAATAGT

Figure 36 part - 103

CTACGATTCCTGTAACTCGGAAGAAATACAGAGAAAGCTTAATGAGCAGCAGGAGCTTCAGAGAGACATA
GAGAAGCACAGTACAGGTGTTGCATCTGTCCTCAACCTGTGTGAAGTCCTGCTGCACGACTGTGACGCCT
GTGCCACTGATGCCGAGTGTGACTCTATACAGCAGGCTACGAGAAACCTGGACCGGCGGTGGAGAAACAT
TTGTGCTATGTCCATGGAAAGGAGGCTGAAAATCGAAGAGACGTGGCGATTGTGGCAGAAATTTCTGGAT
GACTATTCACGTTTTGAAGATTGGCTGAAGTCTTCAGAAAGGACAGCTGCTTTTCCCAGCTCTTCTGGGG
TGATCTATACAGTTGCCAAGGAAGAACTAAAGAAATTTGAGGCTTTCCAGCGACAGGTCCACGAGTGCCT
GACGCAGCTGGAACTGATCAACAAGCAGTACCGCCGCCTGGCCAGGGAGAACCGCACTGATTCAGCATGT
AGCCTCAAACAGATGGTTCACGAAGGCAACCAGAGATGGGACAACCTGCAAAAGCGTGTCACCTCCATCT
TGCGCAGACTCAAGCATTTTATTGGCCAGCGTGAGGAGTTTGAGACTGCGCGGGACAGCATTCTGGTCTG
GCTCACAGAGATGGATCTGCAGCTCACTAATATTGAACATTTTTCTGAGTGTGATGTTCAAGCTAAAATA
AAGCAACTCAAGGCCTTCCAGCAGGAAATTTCACTGAACCACAATAAGATTGAGCAGATAATTGCCCAAG
GAGAACAGCTGATAGAAAAGAGTGAGCCCTTGGATGCAGCGATCATCGAGGAGGAACTAGATGAGCTCCG
ACGGTACTGCCAGGAGGTCTTCGGGCGTGTGGAAAGATACCATAAGAAACTGATCCGCCTGCCTCTCCCA
GACGATGAGCACGACCTCTCAGACAGGGAGCTGGAGCTGGAAGACTCTGCAGCTCTGTCGGACCTGCACT
GGCACGACCGCTCTGCAGACAGCCTGCTTTCTCCACAGCCTTCCTCCAATCTCTCCCTCTCGCTCGCTCA
GCCCCTCCGGAGCGAGCGGTCAGGACGAGACACCCCAGCTAGTGTGGACTCCATCCCCCTGGAGTGGGAT
CACGACTATGACCTCAGTCGGGACCTGGAGTCTGCAATGTCCAGAGCTCTGCCCTCTGAGGATGAAGAAG
GTCAGGATGACAAAGATTTCTACCTCCGGGGAGCTGTTGCCTTATCAGATGTAATGATCCCCGAAAGCCC
TGAGGCCTATGTAAAACTCACAGAAAATGCAATCAAAAATACCTCCGGGGACCACAGTGCCCTAGAGTCA
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CAGTAGCAGTATAGACTCCGTGAAGAGACTGGAGCACAAACTGAAGGAGGAAGAGGAGAGCCTTCCTGGC
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GACATCCAGACCATCGAGCTCCAGATCAAAAAGCTCAAGGAGCTCCAGAAAGCTGTGGACCACCGCAAAG
CCATCATCCTCTCCATCAATCTCTGCAGCCCTGAGTTCACCCAGGCTGACAGCAAGGAGAGCCGGGACCT
GCAGGATCGCTTGTCGCAGATGAATGGGCGCTGGGACCGAGTGTGCTCTCTGCTGGAGGAGTGGCGGGGC
CTGCTGCAGGATGCCCTGATGCAGTGCCAGGGTTTCCATGAAATGAGCCATGGTTTGCTTCTTATGCTGG
AGAACATTGACAGAAGGAAAAATGAAATTGTCCCTATTGATTCTAACCTTGATGCAGAGATACTTCAGGA
CCATCACAAACAGCTTATGCAAATAAAGCATGAGCTGTTGGAATCCCAACTCAGAGTAGCCTCTTTGCAA
GACATGTCTTGCCAACTACTGGTGAATGCTGAAGGAACAGACTGTTTAGAAGCCAAAGAAAAAGTCCATG
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AGACGTGTCAAGTAGTCAGCAGGATTTGTCTTCCTGGTCTTCTGCTGATGAACTGGACACCTCAGGGTCT
GTGAGTCCCACATCAGGAAGGAGCACCCCAAACAGACAGAAAACGCCACGAGGCAAGTGTAGTCTCTCAC
AGCCTGGACCCTCTGTCAGCAGTCCACATAGCAGGTCCACACAAAAGGTGGCTCCGATTCCTCCCTTTCTGA
GCCAGGGCCAGGTCGGTCCGGCCGCGGCTTCCTGTTCAGAGTCCTCCGAGCAGCTCTTCCCCTTCAGCTT
CTCCTGCTCCTCCTCATCGGGCTTGCCTGCCTTGTACCAATGTCAGAGGAAGACTACAGCTGTGCCCTCT
CCAACAACTTTGCCCGGTCATTCCACCCCATGCTCAGATACACGAATGGCCCTCCTCCACTCTGAACTAA
GCAGATGCCATCTGCAGAAGTGCTGGTAGCATAAGGAGGATCGGGTCATAAGCAATCCCAAACTACCAAC
AAGAGGACCTTGATCTTGGCGAAAGCCCTCGGTGTGGCAGCTTTAGCCCTCCTCCAGATCACATGTGTGC
AAATTATGGCTTCAGAGGTGGAAGATAAACAGTGACGGGGGAACAAACAGACAACAAGAAGGTTTGGAAG
AAATCTGGTTTGAGACTCTGAACCTTAGCACTAAGGAGATTGAGTAAGGACCTCCAAAGTTCCCCGGACT
CATGAATTCTGGGCCCTTGGCCCATTCTGTGCACAGCCAAGGACTTCAGTAGACCATCTGGGCAGCTTTC
CCATGGTGCTGCTCCAACCATCAGATAAATGACCCTCCCAAGCACCATGTCAGTGTCGTACAATCTACCA
ACCAACCAGTGCTGAAGAGATTTTAGAACCTTGTAACATACAATTTTTAAGAGCTTATATGGCAGCTTCC
TTTTTACCTTGTTTTCCTTTGGGGCATGATGTTTTAACCTTTGCTTTAGAAGCACAAGCTGTAAATCTAA
AAGGCACTTTTTTTTTAGAGGTATAAAGAAAAACTAGATGTAATAAATAAGATCATGGAAGGCTTTATGTG
AAAAAAGTTGAATGTTATAGT

Human SYNE1 mRNA sequence - var10 (public gi: 17861385) (SEQ ID NO: 192)

CAAAAATCAGTCTGATCTCGGGAAACCTGGAGAAATTTATTTTCTGTACTCTAATGTTCTTTCATTTTGG
TGACCATCAAGGTGCTGGGAGAGGAATTAGATGGCTGTAATTCAAAGTTAATGGAATTAGATGCAGCAGT
ACAGAAATTCTTGGAACAGAATGGCCAACTGGGTAAGCCACTGGCCAAGAAGATAGGAAAACTGACTGAA
CTTCACCAGCAGACCATTAGACAAGCTGAGAATCGGCTCTCCAAGCTCAATCAGGCAACATCACATTTAG
AAGAATACAATGAAATGCTTGAATTAATTTTGAAGTGGATTGAAAAAGCTAAAGTCTTGGCTCATGGAAC
TATTGCATGGAATTCTGCAAGCCAGCTTCGGAAACAATATATTTTGCATCAGACCCTGCTAGAAGAATCC
AAAGAAATTGACAGTGAGCTGGAAGCAATGACTGAGAAATTACAGTACCTCACTAGCGTGTACTGTACAG
AAAAAATGTCTCAGCAAGTGGCAGAACTGGGACGGGAGACTGAGGAGTTGCGACAGATGATCAAAATTCG
TTTGCAGAACCTCCAAGATGCAGCTAAGGATATGAAAAAATTTGAAGCAGAGTTGAAAAAGTTACAAGCT
GCCTTGGAGCAAGCCCAGGCAACACTGACTTCTCCAGAAGTTGGACGTCTCAGTCTCAAGGAGCAGCTCT
CTCATCGGCAGCATTTGTTGTCTGAGATGGAGTCACTGAAGCCGAAGGTGCAAGCAGTGCAGCTCTGCCA
GAGTGCCCTCCGGATCCCCGAGGATGTGGTTGCCAGCTTACCTCTCTGTCATGCTGCTCTGCGGCTGCAG

Figure 36 part - 104

GAAGAGGCCAGCCGGCTGCAGCACACCGCCATCCAGCAGTGTAACATCATGCAGGAAGCTGTGGTACAAT
ATGAACAATATGAGCAAGAAATGAAACATCTCCAGCAACTGATAGAAGGAGCTCACAGAGAGATTGAGGA
TAAACCTGTTGCCACCAGTAACATACAGGAGCTGCAGGCTCAGATTTCTCGGCATGAGGAGCTGGCGCAG
AAAATTAAGGGCTACCAGGAGCAGATCGCTTCTTTGAATTCCAAGTGCAAGATGCTGACGATGAAAGCCA
AGCACGCCACCATGCTGCTGACGGTGACCGAGGTCGAGGGGCTGGCGGAAGGGACAGAGGACCTGGATGG
GGAGCTCCTCCCCACGCCTTCGGCCCACCCCTCTGTGGTCATGATGACTGCAGGTCGCTGTCACACTTTG
CTGTCACCGGTCACTGAGGAGTCTGGGGAGGAGGGAACCAACAGTGAGATTTCCTCTCCACCTGCCTGTC
GCTCCCCTTCACCTGTGGCTAATACAGATGCTTCTGTTAACCAGGACATTGCATATTACCAAGCCTTGTC
TGCTGAGAGGTTGCAGACAGATGCTGCAAAAATTCACCCCAGCACATCCGCATCCCAGGAGTTCTATGAA
CCGGGATTGGAGCCATCCGCTACTGCCAAACTGGGTGATTTGCAGCGTTCTTGGGAAACCTTAAAGAATG
TGATCAGTGAGAAGCAGCGCACACTCTATGAAGCTTTGGAGCGCCAGCAGAAGTACCAGGACTCCCTCCA
GTCCATCTCTACGAAGATGGAGGCCATTGAGCTGAAACTCAGTGAGAGCCCAGAGCCTGGCAGGAGTCCA
GAAAGCCAGATGGCTGAACATCAGGCATTGATGGATGAGATTCTCATGCTCCAGGATGAAATCAATGAGC
TCCAGTCCTCTCTCGCAGAGGAGCTGGTATCCGAGTCTTGTGAGGCCGACCCTGCGGAGCAGCTGGCCTT
GCAGTCCACGCTCACTGTCTTAGCCGAGCGAATGTCCACCATCAGGATGAAAGCCTCGGGGAAACGGCAG
CTTTTGGAGGAGAAGTTGAATGATCAGCTGGAGGAACAAAGGCAGGAACAGGCCCTGCAGAGGTATCGCT
GTGAAGCCGATGAGCTGGACAGCTGGCTCTTGAGTACCAAGGCCACTCTGGACACTGCGCTGAGTCCACC
CAAGGAGCCCATGGACATGGAGGCCCAGCTTATGGACTGCCAGAATATGCTGGTGGAAATAGAGCAGAAG
GTGGTGGCTTTATCAGAACTGTCAGTCCACAATGAGAACCTGCTGCTGGAGGGCAAAGCTCACACCAAGG
ACGAGGCCGAGCAGCTGGCTGGAAAGCTGAGAAGGCTCAAGGGGAGCCTGCTGGAGCTGCAGAGAGCCCT
GCATGATAAGCAGCTCAACATGCAGGGAACAGCACAGGAGAAGGAGGAGAGCGATGTTGACCTAACAGCC
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GTCTCCAGCAACAAAAAGAGTTAGAACAGGAATTAGCCGAGCAGAAGAGTCTCCTTCGCTCAGTAGCCAG
TCGTGGAGAGGAGATTCTAATTCAACATTCGGCGGCAGAGACCTCTGGTGATGCTGGCGAAAAACCTGAT
GTGTTATCCCAGGAGTTGGGGATGGAAGGGGAGAAATCATCCGCTGAAGACCAGATGAGAATGAAATGGG
AAAGCCTACATCAAGAATTTAGTACCAAGCAGAAACTACTACAGAATGTTCTGGAACAGGAACAAGAGCA
AGTGCTTTATAGCAGGCCAAATCGACTCTTGTCTGGTGTGCCACTGTACAAAGGGGACGTGCCAACCCAA
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GAGGGGCAAAGAGGCAGAGTATACACTTGGAGCAGAAGTTGTATGATGGAGTCTCAGCCACCTCTACTTG
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TTCAACCAAGAGATTCTTGCCAAAGACATTAAGGAAATGTCTGAAGAAATGGATAAGAACAAAAACTTGT
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GCCCAAATTATATCAAGTATTAGATGATGGGAAACGACTTCTGATATCCATCAGCTGCTCAGATCTAGAA
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GATCATCTAAATGCTTTCCTGGAGTTTTCTAAAGAAGTGGATGCCCAATCTTCCCTGAAATCATCTGTTC
TGAGTACTGGAAATCAGCTCCTTCGACTAAAAAAGGTGGACACAGCCACGCTGCGCTCTGAGTTGTCGCG
CATTGATAGCCAGTGGACTGACCTGCTAACCAATATCCCAGCCGTCCAGGAGAAGCTCCACCAGCTCCAG
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AGAAGCTGTGCAAGTTCAGGTGGACAATCTTCAGAATCTCCAAGATGATCTGGAAAAACAGGAAAGGAGC

Figure 36 part - 105

TTACAGAAATTTGGCTCTATCACCAACCAATTATTAAAAGAGTGTCACCCACCCGTGACAGAAACTCTTA
CCAATACACTGAAAGAAGTCAACATGAGATGGAATAACTTGCTGGAAGAGATTGCTGAGCAGCTACAGTC
CAGCAAGGCCCTACTTCAGCTTTGGCAAAGATACAAGGACTACTCCAAACAGTGTGCTTCGACAGTTCAG
CAGCAGGAGGATCGAACCAATGAGCTGTTGAAGGCAGCCACAAACAAGGACATTGCCGATGATGAGGTTG
CCACATGGATTCAAGATTGCAACGACCTCCTCAAAGGACTGGGCACAGTTAAAGATTCCCTCTTTGTTCT
CCATGAGCTGGGAGAGCAACTGAAGCAACAAGTGGATGCTTCCGCAGCATCAGCTATTCAATCGGATCAA
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GAGTTCTTGATTATGAAACCTTTGCCAAGAGTTTAGAAGCTTTGGAGGCCTGGATAGTGGAAGCTGAAGA
AATACTACAAGGGCAGGACCCTAGCCACTCATCTGACCTCTCCACAATCCAGGAAAGGATGGAAGAACTT
AAGGGACAGATGTTAAAATTCAGCAGCATGGCTCCAGATTTAGACCGTCTAAATGAGCTTGGATATAGGT
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GACTACAGAAAGATTCAGCAAGTTGCAGTCATTTTTGCTACAACATCAGACTTTCTTGGAAAAATGTGAA
ACATGGATGGAATTCCTAGTTCAGACAGAACAAAAGTTAGCAGTAGAGATTTCAGGAAATTATCAGCACC
TTTTGGAACAGCAGAGAGCACACGAGTTGTTTCAAGCCGAGATGTTCAGTCGTCAGCAGATTTTGCACTC
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AACTCCTTCTCTCGGCGGACAGTGGCGCTGAGGCCGCCTTGCAGGCCGAACTCGCTGAAATCCAAGAGAA
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CTGGACAGATGACTTGACCCAGTTGAGCCTGCTGAAGGACACCCTCTCTGCCTATATCAGTGCTGATGAT
ATCTCCATTCTTAATGAACGCGTAGAGCTTCTGCAAAGGCAGTGGGAAGAACTATGCCACCAGCTCTCCT
TAAGGCGGCAGCAAATAGGTGAAAGATTGAATGAATGGGCAGTCTTCAGTGAAAAGAACAAGGAACTCTG
TGAGTGGTTGACTCAAATGGAAAGCAAAGTTTCTCAGAATGGAGACATTCTCATTGAAGAAATGATAGAG
AAGCTCAAGAAGGATTATCAAGAGGAAATTGCTATTGCTCAAGAGAACAAAATACAGCTCCAACAAATGG
GAGAACGACTTGCTAAAGCCAGCCATGAAAGCAAAGCATCTGAGATTGAATACAAGCTGGGAAAGGTCAA
CGACCGGTGGCAGCATCTCCTGGACCTCATTGCAGCCAGGGTGAAGAAGCTGAAGGAGACCCTGGTAGCC
GTGCAGCAGCTTGATAAGAACATGAGCAGCCTGAGGACCTGGCTCGCTCACATCGAGTCAGAGCTGGCCA
AGCCAATAGTCTACGATTCCTGTAACTCGGAAGAAATACAGAGAAAGCTTAATGAGCAGCAGGAGCTTCA
GAGAGACATAGAGAAGCACAGTACAGGTGTTGCATCTGTCCTCAACCTGTGTGAAGTCCTGCTGCACGAC
TGTGACGCCTGTGCCACTGATGCCGAGTGTGACTCTATACAGCAGGCTACGAGAAACCTGGACCGGCGGT
GGAGAAACATTTGTGCTATGTCCATGGAAAGGAGGCTGAAAATCGAAGAGACGTGGCGATTGTGGCAGAA
ATTTCTGGATGACTATTCACGTTTTGAAGATTGGCTGAAGTCTTCAGAAAGGACAGCTGCTTTTCCCAGC
TCTTCTGGGGTGATCTATACAGTTGCCAAGGAAGAACTAAAGAAATTTGAGGCTTTCCAGCGACAGGTCC
ACGAGTGCCTGACGCAGCTGGAACTGATCAACAAGCAGTACCGCCGCCTGGCCAGGGAGAACCGCACTGA
TTCAGCATGTAGCCTCAAACAGATGGTTCACGAAGGCAACCAGAGATGGGACAACCTGCAAAAGCGTGTC
ACCTCCATCTTGCGCAGACTCAAGCATTTTATTGGCCAGCGTGAGGAGTTTGAGACTGCGCGGGACAGCA
TTCTGGTCTGGCTCACAGAGATGGATCTGCAGCTCACTAATATTGAACATTTTTCTGAGTGTGATGTTCA
AGCTAAAATAAAGCAACTCAAGGCCTTCCAGCAGGAAATTTCACTGAACCACAATAAGATTGAGCAGATA
ATTGCCCAAGGAGAACAGCTGATAGAAAAGAGTGAGCCCTTGGATGCAGCGATCATCGAGGAGGAACTAG
ATGAGCTCCGACGGTACTGCCAGGAGGTCTTCGGGCGTGTGGAAAGATACCATAAGAAACTGATCCGCCT
GCCTCTCCCAGACGATGAGCACGACCTCTCAGACAGGGAGCTGGAGCTGGAAGACTCTGCAGCTCTGTCG
GACCTGCACTGGCACGACCGCTCTGCAGACAGCCTGCTTTCTCCACAGCCTTCCTCCAATCTCTCCCTCT
CGCTCGCTCAGCCCCTCCGGAGCGAGCGGTCAGGACGAGACACCCCAGCTAGTGTGGACTCCATCCCCCT
GGAGTGGGATCACGACTATGACCTCAGTCGGGACCTGGAGTCTGCAATGTCCAGAGCTCTGCCCTCTGAG
GATGAAGAAGGTCAGGATGACAAAGATTTCTACCTCCGGGGAGCTGTTGCCTTATCAGGGGACCACAGTG
CCCTAGAGTCACAGATCCGACAACTGGGCAAAGCCCTGGATGATAGCCGCTTTCAGATACAGCAAACCGA
AAATATCATTCGCAGCAAAACTCCCACGGGGCCGGAGCTAGACACCAGCTACAAAGGCTACATGAAACTG
CTGGGCGAATGCAGTAGCAGTATAGACTCCGTGAAGAGACTGGAGCACAAACTGAAGGAGGAAGAGGAGA
GCCTTCCTGGCTTTGTTAACCTGCATAGTACCGAAACCCAAACGGCTGGTGTGATTGACCGATGGGAGCT
TCTCCAGGCCCAGGCATTGAGCAAGGAGTTGAGGATGAAGCAGAACCTCCAGAAGTGGCAGCAGTTTAAC
TCAGACTTGAACAGCATCTGGGCCTGGCTGGGGGACACGGAGGAGGAGTTGGAACAGCTCCAGCGTCTGG
AACTCAGCACTGACATCCAGACCATCGAGCTCCAGATCAAAAAGCTCAAGGAGCTCCAGAAAGCTGTGGA
CCACCGCAAAGCCATCATCCTCTCCATCAATCTCTGCAGCCCTGAGTTCACCCAGGCTGACAGCAAGGAG
AGCCGGGACCTGCAGGATCGCTTGTCGCAGATGAATGGGCGCTGGGACCGAGTGTGCTCTCTGCTGGAGG
AGTGGCGGGGCCTGCTGCAGGATGCCCTGATGCAGTGCCAGGGTTTCCATGAAATGAGCCATGGTTTGCT
TCTTATGCTGGAGAACATTGACAGAAGGAAAAATGAAATTGTCCCTATTGATTCTAACCTTGATGCAGAG
ATACTTCAGGACCATCACAAACAGCTTATGCAAATAAAGCATGAGCTGTTGGAATCCCAACTCAGAGTAG
CCTCTTTGCAAGACATGTCTTGCCAACTACTGGTGAATGCTGAAGGAACAGACTGTTTAGAAGCCAAAGA
AAAAGTCCATGTTATTGGAAATCGGCTCAAACTTCTCTTGAAGGAGGTCAGTCGTCATATCAAGGAACTG

Figure 36 part - 106

GAGAAGTTATTAGACGTGTCAAGTAGTCAGCAGGATTTGTCTTCCTGGTCTTCTGCTGATGAACTGGACA
CCTCAGGGTCTGTGAGTCCCACATCAGGAAGGAGCACCCCAAACAGACAGAAAACGCCACGAGGCAAGTG
TAGTCTCTCACAGCCTGGACCCTCTGTCAGCAGTCCACATAGCAGGTCCACAAAAGGTGGCTCCGATTCC
TCCCTTTCTGAGCCAGGGCCAGGTCGGTCCGGCCGCGGCTTCCTGTTCAGAGTCCTCCGAGCAGCTCTTC
CCCTTCAGCTTCTCCTGCTCCTCCTCATCGGGCTTGCCTGCCTTGTACCAATGTCAGAGGAAGACTACAG
CTGTGCCCTCTCCAACAACTTTGCCCGGTCATTCCACCCCATGCTCAGATACACGAATGGCCCTCCTCCA
CTCTGAACTAAGCAGATGCCATCTGCAGAAGTGCTGGTAGCATAAGGAGGATCGGGTCATAAGCAATCCC
AAACTACCAACAAGAGGACCTTGATCTTGGCGAAAGCCCTCGGTGTGGCAGCTTTAGCCCTCCTCCAGAT
CACATGTGTGCAAATTATGGCTTCAGAGGTGGAAGATAAACAGTGACGGGGGAACAAACAGACAACAAGA
AGGTTTGGAAGAAATCTGGTTTGAGACTCTGAACCTTAGCACTAAGGAGATTGAGTAAGGACCTCCAAAG
TTCCCCGGACTCATGAATTCTGGGCCCTTGGCCCATTCTGTGCACAGCCAAGGACTTCAGTAGACCATCT
GGGCAGCTTTCCCATGGTGCTGCTCCAACCATCAGATAAATGACCCTCCCAAGCACCATGTCAGTGTCGT
ACAATCTACCAACCAACCAGTGCTGAAGAGATTTTAGAACCTTGTAACATACAATTTTTAAGAGCTTATA
TGGCAGCTTCCTTTTTACCTTGTTTTCCTTTGGGGCATGATGTTTTAACCTTTGCTTTAGAAGCACAAGC
TGTAAATCTAAAAGGCACTTTTTTTTAGAGGTATAAAGAAAAACTAGATGTAATAAATAAGATCATGGAA
GGCTTTATGTGAAAAAAGTTGAATGTTATAGT

Human SYNE1 mRNA sequence - var11 (public gi: 17227153) (SEQ ID NO: 193)

AACTCCTTCTCTCGGCGGACAGTGGCGCTGAGGCCGCCTTGCAGGCCGAACTCGCTGAAATCCAAGAGAA
ATGGAAATCAGCCAGCATGCGGCTGGAAGAACAGAAGAAAAAACTAGCCTTCTTGTTGAAAGACTGGGAA
AAATGTGAGAAAGGAATAGCAGATTCCCTGGAGAAACTACGAACTTTCAAAAAGAAGCTTTCGCAGTCTC
TCCCGGATCACCATGAAGAGCTCCATGCAGAACAAATGCGTTGCAAGGAATTAGAAAATGCAGTTGGGAG
CTGGACAGATGACTTGACCCAGTTGAGCCTGCTGAAGGACACCCTCTCTGCCTATATCAGTGCTGATGAT
ATCTCCATTCTTAATGAACGCGTAGAGCTTCTGCAAAGGCAGTGGGAAGAACTATGCCACCAGCTCTCCT
TAAGGCGGCAGCAAATAGGTGAAAGATTGAATGAATGGGCAGTCTTCAGTGAAAAGAACAAGGAACTCTG
TGAGTGGTTGACTCAAATGGAAAGCAAAGTTTCTCAGAATGGAGACATTCTCATTGAAGAAATGATAGAG
AAGCTCAAGAAGGATTATCAAGAGGAAATTGCTATTGCTCAAGAGAACAAAATACAGCTCCAACAAATGG
GAGAACGACTTGCTAAAGCCAGCCATGAAAGCAAAGCATCTGAGATTGAATACAAGCTGGGAAAGGTCAA
CGACCGGTGGCAGCATCTCCTGGACCTCATTGCAGCCAGGGTGAAGAAGCTGAAGGAGACCCTGGTAGCC
GTGCAGCAGCTTGATAAGAACATGAGCAGCCTGAGGACCTGGCTCGCTCACATCGAGTCAGAGCTGGCCA
AGCCAATAGTCTACGATTCCTGTAACTCGGAAGAAATACAGAGAAAGCTTAATGAGCAGCAGGAGCTTCA
GAGAGACATAGAGAAGCACAGTACAGGTGTTGCATCTGTCCTCAACCTGTGTGAAGTCCTGCTGCACGAC
TGTGACGCCTGTGCCACTGATGCCGAGTGTGACTCTATACAGCAGGCTACGAGAAACCTGGACCGGCGGT
GGAGAAACATTTGTGCTATGTCCATGGAAAGGAGGCTGAAAATCGAAGAGACGTGGCGATTGTGGCAGAA
ATTTCTGGATGACTATTCACGTTTTGAAGATTGGCTGAAGTCTTCAGAAAGGACAGCTGCTTTTCCCAGC
TCTTCTGGGGTGATCTATACAGTTGCCAAGGAAGAACTAAAGAAATTTGAGGCTTTCCAGCGACAGGTCC
ACGAGTGCCTGACGCAGCTGGAACTGATCAACAAGCAGTACCGCCGCCTGGCCAGGGAGAACCGCACTGA
TTCAGCATGTAGCCTCAAACAGATGGTTCACGAAGGCAACCAGAGATGGGACAACCTGCAAAAGCGTGTC
ACCTCCATCTTGCGCAGACTCAAGCATTTTATTGGCCAGCGTGAGGAGTTTGAGACTGCGCGGGACAGCA
TTCTGGTCTGGCTCACAGAGATGGATCTGCAGCTCACTAATATTGAACATTTTTCTGAGTGTGATGTTCA
AGCTAAAATAAAGCAACTCAAGGCCTTCCAGCAGGAAATTTCACTGAACCACAATAAGATTGAGCAGATA
ATTGCCCAAGGAGAACAGCTGATAGAAAAGAGTGAGCCCTTGGATGCAGCGATCATCGAGGAGGAACTAG
ATGAGCTCCGACGGTACTGCCAGGAGGTCTTCGGGCGTGTGGAAAGATACCATAAGAAACTGATCCGCCT
GCCTCTCCCAGACGATGAGCACGACCTCTCAGACAGGGAGCTGGAGCTGGAAGACTCTGCAGCTCTGTCG
GACCTGCACTGGCACGACCGCTCTGCAGACAGCCTGCTTTCTCCACAGCCTTCCTCCAATCTCTCCCTCT
CGCTCGCTCAGCCCCTCCGGAGCGAGCGGTCAGGACGAGACACCCCAGCTAGTGTGGACTCCATCCCCCT
GGAGTGGGATCACGACTATGACCTCAGTCGGGACCTGGAGTCTGCAATGTCCAGAGCTCTGCCCTCTGAG
GATGAAGAAGGTCAGGATGACAAAGATTTCTACCTCCGGGGAGCTGTTGCCTTATCAGGGGACCACAGTG
CCCTAGAGTCACAGATCCGACAACTGGGCAAAGCCCTGGATGATAGCCGCTTTCAGATACAGCAAACCGA
AAATATCATTCGCAGCAAAACTCCCACGGGGCCGGAGCTAGACACCAGCTACAAAGGCTACATGAAACTG
CTGGGCGAATGCAGTAGCAGTATAGACTCCGTGAAGAGACTGGAGCACAAACTGAAGGAGGAAGAGGAGA
GCCTTCCTGGCTTTGTTAACCTGCATAGTACCGAAACCCAAACGGCTGGTGTGATTGACCGATGGGAGCT
TCTCCAGGCCCAGGCATTGAGCAAGGAGTTGAGGATGAAGCAGAACCTCCAGAAGTGGCAGCAGTTTAAC
TCAGACTTGAACAGCATCTGGGCCTGGCTGGGGGACACGGAGGAGGAGTTGGAACAGCTCCAGCGTCTGG
AACTCAGCACTGACATCCAGACCATCGAGCTCCAGATCAAAAAGCTCAAGGAGCTCCAGAAAGCTGTGGA
CCACCGCAAAGCCATCATCCTCTCCATCAATCTCTGCAGCCCTGAGTTCACCCAGGCTGACAGCAAGGAG
AGCCGGGACCTGCAGGATCGCTTGTCGCAGATGAATGGGCGCTGGGACCGAGTGTGCTCTCTGCTGGAGG
AGTGGCGGGGCCTGCTGCAGGATGCCCTGATGCAGTGCCAGGGTTTCCATGAAATGAGCCATGGTTTGCT
TCTTATGCTGGAGAACATTGACAGAAGGAAAAATGAAATTGTCCCTATTGATTCTAACCTTGATGCAGAG
ATACTTCAGGACCATCACAAACAGCTTATGCAAATAAAGCATGAGCTGTTGGAATCCCAACTCAGAGTAG
CCTCTTTGCAAGACATGTCTTGCCAACTACTGGTGAATGCTGAAGGAACAGACTGTTTAGAAGCCAAAGA
AAAAGTCCATGTTATTGGAAATCGGCTCAAACTTCTCTTGAAGGAGGTCAGTCGTCATATCAAGGAACTG
GAGAAGTTATTAGACGTGTCAAGTAGTCAGCAGGATTTGTCTTCCTGGTCTTCTGCTGATGAACTGGACA

Figure 36 part - 107

CCTCAGGGTCTGTGAGTCCCACATCAGGAAGGAGCACCCCAAACAGACAGAAAACGCCACGAGGCAAGTG
TAGTCTCTCACAGCCTGGACCCTCTGTCAGCAGTCCACATAGCAGGTCCACAAAAGGTGGCTCCGATTCC
TCCCTTTCTGAGCCAGGGCCAGGTCGGTCCGGCCGCGGCTTCCTGTTCAGAGTCCTCCGAGCAGCTCTTC
CCCTTCAGCTTCTCCTGCTCCTCCTCATCGGGCTTGCCTGCCTTGTACCAATGTCAGAGGAAGACTACAG
CTGTGCCCTCTCCAACAACTTTGCCCGGTCATTCCACCCCATGCTCAGATACACGAATGGCCCTCCTCCA
CTCTGAACTAAGCAGATGCCATCTGCAGAAGTGCTGGTAGCATAAGGAGGATCGGGTCATAAGCAATCCC
AAACTACCAACAAGAGGACCTTGATCTTGGCGAAAGCCCTCGGTGTGGCAGCTTTAGCCCTCCTCCAGAT
CACATGTGTGCAAATTATGGCTTCAGAGGTGGAAGATAAACAGTGACGGGGGAACAAACAGACAACAAGA
AGGTTTGGAAGAAATCTGGTTTGAGACTCTGAACCTTAGCACTAAGGAGATTGAGTAAGGACCTCCAAAG
TTCCCCGGACTCATGAATTCTGGGCCCTTGGCCCATTCTGTGCACAGCCAAGGACTTCAGTAGACCATCT
GGGCAGCTTTCCCATGGTGCTGCTCCAACCATCAGATAAATGACCCTCCCAAGCACCATGTCAGTGTCGT
ACAATCTACCAACCAACCAGTGCTGAAGAGATTTTAGAACCTTGTAACATACAATTTTTAAGAGCTTATA
TGGCAGCTTCCTTTTTACCTTGTTTTCCTTTGGGGCATGATGTTTTAACCTTTGCTTTAGAAGCACAAGC
TGTAAATCTAAAAGGCACTTTTTTTTAGAGGTATAAAGAAAAACTAGATGTAATAAATAAGATCATGGAA
GGCTTTATGTGAAAAAAGTTGAATGTTATAGT

Human SYNE1 mRNA sequence - var12 (public gi: 16550165) (SEQ ID NO: 194)

ACAAAAGAGCATTCCATGAAATCTACCGGACCAGGTCTGTTAACGGGATTCCAGTGCCACCTGATCAATT
AGAGGACATGGCCGAGAGGTTTCATTTTGTTTCCTCCACATCAGAGCTACACCTAATGAAAATGGAATTT
TTAGAATTAAAGTACCGTCTGCTCTCACTGCTGGTTCTTGCAGAGTCAAAGCTGAAGTCTTGGATCATTA
AGTACGGGAGGAGAGAGTCAGTGGAGCAGCTTCTACAAAACTACGTGTCTTTTATAGAAAATAGCAAGTT
CTTTGAACAATATGAGGTGACATACCAGATCTTGAAACAGACAGCTGAGATGTATGTCAAAGCAGATGGT
TCAGTGGAAGAAGCTGAGAATGTGATGAAATTCATGAATGAAACCACCGCTCAGTGGAGGAATCTCTCAG
TAGAAGTGAGGAGTGTGAGGAGCATGCTGGAAGAAGTGATCTCTAACTGGGATCGCTATGGCAATACAGT
GGCTAGTCTGCAAGCCTGGCTAGAGGATGCTGAAAAAATGCTCAATCAATCAGAAAATGCCAAAAAGGAT
TTTTTTCGAAATTTACCTCATTGGATTCAGCAGCATACTGCCATGAACGATGCTGGCAATTTTCTAATTG
AAACCTGTGATGAGATGGTTTCCCGTGACCTGAAGCAGCAATTACTGTTGCTAAATGGGCGGTGGAGGGA
GTTGTTTATGGAAGTCAAGCAATATGCTCAAGCTGATGAGATGGACAGAATGAAGAAGGAATACACAGAC
TGTGTTGTTACCCTGTCTGCTTTTGCGACGGAAGCCCATAAGAAACTTTCTGAACCCTTAGAAGTCTCTT
TTATGAATGTCAAGCTATTAATTCAAGACTTGGAGGATATTGAGCAGAGGGTGCCTGTGATGGATGCCCA
ATACAAGATAATTACAAAGACAGCACACCTCATTACCAAAGAAAGCCCCCAAGAAGAAGGAAAAGAAATG
TTTGCGACCATGTCAAAGCTCAAAGAGCAGCTAACCAAGGTCAAAGAATGTTACTCCCCACTCCTTTATG
AGTCTCAGCAGCTGTTGATTCCGTTGGAGGAATTAGAAAAGCAGATGACGTCCTTTTATGACTCACTTGG
GAAAATCAATGAAATTATCACAGTTCTTGAGCGTGAGGCACAATCGAGTGCCCTTTTTAAACAAAAACAT
CAGGAACTGTTAGCTTGTCAAGAAAACTGTAAGAAAACCTTGACACTTATTGAGAAAGGCAGTCAAAGTG
TTCAAAAGTTTGTGACCTTGAGCAACGTGTTAAAGCATTTTGATCAGACGAGGCTACAAAGACAGATTGC
AGATATTCATGTTGCTTTTCAGAGTATGGTAAAGAAAACTGGAGATTGGAAGAAGCATGTGGAAACCAAC
AGTCGCTTGATGAAGAAGTTTGAGGAGTCTCGAGCAGAGTTGGAGAAGGTACTGCGGATTGCTCAGGAGG
GCCTGGAGGAAAAGGGGGATCCAGAGGAGCTCCTGCGGAGACACACTGAGTTTTTCAGTCAGCTGGATCA
GAGGGTGCTCAATGCTTTCCTGAAAGCTTGTGATGAACTCACCGACATCCTTCCAGAGCAGGAGCAGCAG
GGGCTGCAGGAAGCTGTTCGAAAGCTCCACAAACAATGGAAGGTGAGTCAGGACAGGACGGAGACACCGT
GCATCCTCAATGAAGGGAGAAGCTTGAGCGTGTTAAGGTCCAAATGTAAGAGAAATTTAGAAATTCCTGG
AAAGTCACTGTAACTATTTCGCTCATTTAAAAACTCAAAAAACTGGACTTAAATAAAACCTGATAATATA
TG

Human SYNE1 mRNA sequence - var13 (public gi: 16553949) (SEQ ID NO: 195)

ATAGTAGAATTATTCATTATAATATTTGGCTTTGACAAAAATCAGTCTGATCTCGGGAAACCTGGAGAAA
TTTATTTTCTGTACTCTAATGTTCTTTCATTTTGGTGACCATCAAGGTGCTGGGAGAGGAATTAGATGGC
TGTAATTCAAAGTTAATGGAATTAGATGCAGCAGTACAGAAATTCTTGGAACAGAATGGCCAACTGGGTA
AGCCACTGGCCAAGAAGATAGGAAAACTGACTGAACTTCACCAGCAGACCATTAGACAAGCTGAGAATCG
GCTCTCCAAGCTCAATCAGGCAGCATCACATTTAGAAGAATACAATGAAATGCTTGAATTAATTTTGAAG
TGGATTGAAAAAGCTAAAGTCTTGGCTCATGGAACTATTGCATGGAATTCTGCAAGCCAGCTTCGGGAAC
AATATATTTTGCATCAGACCCTGCTAGAAGAATCCAAAGAAATTGACAGTGAGCTGGAAGCAATGACTGA
GAAATTACAGTACCTCACTAGCGTGTACTGTACAGAAAAAATGTCTCAGCAAGTGGCAGAACTGGGACGG
GAGACTGAGGAGTTGCGACAGATGATCAAAATTCGTTTGCAGAACCTCCAAGATGCAGCTAAGGATATGA
AAAAATTTGAAGCAGAGTTGAAAAAGTTACAAGCTGCCTTGGAGCAAGCCCAGGCAACACTGACTTCTCC
AGAAGTTGGACGTCTCAGTCTCAAGGAGCAGCTCTCTCATCGGCAGCATTTGTTGTCTGAGATGGAGTCA
CTGAAGCCGAAGGTGCAAGCAGTGCAGCTCTGCCAGAGTGCCCTCCGGATCCCCGAGGATGTGGTTGCCA
GCTTACCTCTCTGTCATGCTGCTCTGCGGCTGCAGGAAGAGGCCAGCCGGCTGCAGCACACCGCCATCCA
GCAGTGTAACATCATGCAGGAAGCTGTGGTACAATATGAACAATATGAGCAAGAAATGAAACATCTCCAG
CAACTGATAGAAGGAGCTCACAGAGAGATTGAGGATAAACCTGTTGCCACCAGTAACATACAGGAGCTGC
AGGCTCAGATACACGAATGGCCCTCCTCCACTCTGAACTAAGCAGATGCCATCTGCAGAAGTGCTGGTAG

Figure 36 part - 108

CATAAGGAGGATCGGGTCATAAGCAATCCCAAACTACCAACAAGAGGACCTTGATCTTGGCGAAAGCCCT
CGGTGTGGCAGCTTTAGCCCTCCTCCAGATCACATGTGTGCAAATTATGGCTTCAGAGGTGGAAGATAAA
CAGTGACGGGGGAACAAACAGACAACAAGAAGGTTTGGAAGAAATCTGGTTTGGGACTCTGAACCTTAGC
ACTAAGGAGATTGAGTAAGGACCTCCAAAGTTCCCCGGACTCATGAATTCTGGGCCCTTGGCCCATTCTG
TGCACAGCCAAGGACTTCAGTAGACCATCTGGGCAGCTTTCCCATGGTGCTGCTCCAACCATCAGATAAA
TGACCCTCCCAAGCACCATGTCAGTGTCGTACAATCTACCAACCAACCAGTGCTGAAGAGATTTTAGAAC
CTTGTAACATACAATTTTTAAGAGCTTATATGGCAGCTTCCTTTTTACCTTGTTTTCCTTTGGGGCATGA
TGTTTTAACCTTTGCTTTAGAAGCACAAGCTGTAAATCTAAAAGGCACTTTTTTTTAGAGGTATAAAGAA
AAACTAGATGTAATAAATAAGATCATGGAAGGCTTTATGTGAAAAAAGTTGAATGTTATAGTAAAAAAAA
AAGATATTTATGTATGTACAGTTTGCTAAAGCCAAGTTTTGTTTGTATTGATTTCTTTGCATTTATTATA
GATATTATAAAAT

Human SYNE1 mRNA sequence - var14 (public gi: 12698056) (SEQ ID NO: 196)
ACAACGGAAACTTGAGCAACATAAGGATCTGCTTCAAAACACGGATGCCCACAAAAGAGCATTCCATGAA
ATCTACCGGACCAGGTCTGTTAACGGGATTCCAGTGCCACCTGATCAATTAGAGGACATGGCCGAGAGGT
TTCATTTTGTTTCCTCCACATCAGAGCTACACCTAATGAAAATGGAATTTTTAGAATTAAAGTACCGTCT
GCTCTCACTGCTGGTTCTTGCAGAGTCAAAGCTGAAGTCTTGGATCATTAAGTACGGGAGGAGAGAGTCA
GTGGAGCAGCTTCTACAAAACTACGTGTCTTTTATAGAAAATAGCAAGTTCTTTGAACAATATGAGGTGA
CATACCAGATCTTGAAACAGACAGCTGAGATGTATGTCAAAGCAGATGGTTCAGTGGAAGAAGCTGAGAA
TGTGATGAAATTCATGAATGAAACCACCGCTCAGTGGAGGAATCTCTCAGTAGAAGTGAGGAGTGTGAGG
AGCATGCTGGAAGAAGTGATCTCTAACTGGGATCGCTATGGCAATACAGTGGCTAGTCTGCAAGCCTGGC
TAGAGGATGCTGAAAAAATGCTCAATCAATCAGAAAATGCCAAAAAGGATTTTTTTCGAAATTTACCTCA
TTGGATTCAGCAGCATACTGCCATGAACGATGCTGGCAATTTTCTAATTGAAACCTGTGATGAGATGGTT
TCCCGTGACCTGAAGCAGCAATTACTGTTGCTAAATGGGCGGTGGAGGGAGTTGTTTATGGAAGTCAAGC
AATATGCTCAAGCTGATGAGATGGACAGAATGAAGAAGGAATACACAGACTGTGTTGTTACCCTGTCTGC
TTTTGCAACGGAAGCCCATAAGAAACTTTCTGAACCCTTAGAAGTCTCTTTTATGAATGTCAAGCTATTA
ATTCAAGACTTGGAGGATATTGAGCAGAGGGTGCCTGTGATGGATGCCCAATACAAGATAATTACAAAGA
CAGCACACCTCATTACCAAAGAAAGCCCCCAAGAAGAAGGAAAAGAAATGTTTGCGACCATGTCAAAGCT
CAAAGAGCAGCTAACCAAGGTCAAAGAATGTTACTCCCCACTCCTTTATGAGTCTCAGCAGCTGTTGATT
CCGTTGGAGGAATTAGAAAAGCAGATGACGTCCTTTTATGACTCACTTGGGAAAATCAATGAAATTATCA
CAGTTCTTGAGCGTGAGGCACAATCGAGTGCCCTTTTTAAACAAAAACATCAGGAACTGTTAGCTTGTCA
AGAAAACTGTAAGAAAACCTTGACACTTATTGAGAAAGGCAGTCAAAGTGTTCAAAAGTTTGTGACCTTG
AGCAACGTGTTAAAGCATTTTGATCAGACGAGGCTACAAAGACAGATTGCAGATATTCATGTTGCTTTTC
AGAGTATGGTAAAGAAAACTGGAGATTGGAAGAAGCATGTGGAAACCAACAGTCGCTTGATGAAGAAGTT
TGAGGAGTCTCGAGCAGAGTTGGAGAAGGTACTGCGGATTGCTCAGGAGGGCCTGGAGGAAAAGGGGGAT
CCAGAGGAGCTCCTGCGGAGACACACTGAGTTTTTCAGTCAGCTGGATCAGAGGGTGCTCAATGCTTTCC
TGAAAGCTTGTGATGAACTCACCGACATCCTTCCAGAGCAGGAGCAGCAGGGGCTGCAGGAAGCTGTTCG
AAAGCTCCACAAACAATGGAAGGATCTTCAAGGAGAAGCCCCTTATCATTTGCTTCATCTGAAGATTGAT
GTGGAGAAGAATAGGTTCTTAGCCTCTGTAGAAGAATGCAGAACTGAGCTGGATCGAGAGACCAAGCTGA
TGCCCCAGGAAGGCAGTGAAAAGATAATTAAAGAGCACAGGGTTTTCTTCAGTGACAAAGGTCCTCATCA
TCTCTGTGAGAAAAGGTTACAGCTCATCGAGGAACTCTGTGTGAAACTCCCAGTGCGGGACCCAGTAAGG
GACACACCTGGAACCTGTCACGTGACTCTCAAAGAGCTCAGAGCTGCCATTGACAGCACCTACAGGAAGC
TCATGGAAGACCCAGACAAGTGGAAGGACTACACTAGCAGATTCTCTGAGTTCTCATCTTGGATATCTAC
AAATGAGACACAATTAAAGGGGATCAAGGGTGAGGCCATCGATACTGCCAACCACGGAGAGGTTAAACGT
GCCGTTGAAGAGATCAGAAATGGTGTTACCAAAAGGGGTGAGACCCTCAGCTGGCTGAAATCCAGGCTGA
AAGTTTTGACAGAAGTTTCTTCTGAGAATGAAGCCCAAAAGCAGGGAGATGAGCTGGCAAAATTATCCAG
CTCTTTCAAGGCTCTTGTGACGCTGCTGTCAGAGGTTGAAAAGATGCTAAGCAATTTTGGGGACTGTGTC
CAGTACAAAGAAATAGTCAAAAATTCTCTCGAAGAATTAATTTCTGGCTCTAAAGAAGTCCAGGAACAAG
CTGAGAAGATCTTGGATACTGAAAATCTGTTTGAAGCACAGCAGTTACTTCTTCATCACCAGCAAAAGAC
AAAGCGGATCTCAGCAAAGAAGAGAGATGTGCAGCAGCAGATCGCGCAGGCGCAGCAGGGAGAAGGGGGG
CTGCCTGACCGAGGCCACGAGGAGCTGCGGAAGCTGGAGAGCACACTGGATGGCCTGGAGCGCAGCCGGG
AGAGGCAGGAACGCCGCATCCAGGTCACATTAAGAAAATGGGAGCGATTTGAAACAAACAAAGAAACAGT
AGTAAGATACCTTTTTCAAACAGGTTCCAGTCATGAACGCTTCTTGAGTTTTAGCAGTTTGGAAAGTTTA
TCTTCAGAACTGGAACAAACAAAGGAGTTTTCTAAACGGACAGAAAGTATTGCAGTCCAGGCTGAGAACC
TTGTAAAGGAAGCTTCAGAGATACCGCTTGGGCCCCAAAATAAGCAGCTGCTTCAACAGCAGGCCAAGTC
AATCAAAGAACAAGTCAAAAAATTAGAAGACACGCTTGAAGAAGAGTATGTGATTGACAAGTCCTAAACT
TTCTTCTCTGAGATAAAGTTTCATACAATCTTTCCTGTACCTTGTATTCAAAACACTCTTTTAAAATCTC
AAAGTGTCTGTGTATTTCAGCATGTTTTGAGGAAACAACTCACAGTTCAAAAGAAAGTATCGCTAATACA
GAAACCAATATCTATAACAGAGCCCAAAAAATATAAAGGATGTGGGTTTTGCATCTTAAACTGATCATGT
TCATGAGAAAGCCATATCTATTCTATTCTGTGGCCTTTGTACATTGTAGAGGGAATCTTGAAAAAGAACT
AATATTTAAAATAATTTTTTTACTATATTATTCTGCTGTCACCATTTAGAGCGAAAAGGAGATATTTTGT
TAGTGTAGATTCCAGGCCTAAATACACATCACATAGACCATATATCTCCAACCTGAAGAAGCTCCTGGAG
CTTGTTTACAGTGCCTCGGTATTCAAGTTATCCTGACTAATATGCTCTTTCCAGAAATTAACTTTAAAAT

Figure 36 part - 109

ATTTTATTTTTAAACTTTTAATGTTTGTTTATCTG

Human SYNE1 mRNA sequence - var15 (public gi: 2895592) (SEQ ID NO: 197)

CAACCTGCATAGTAACGAAACCAAACGGCTGGTGTGATTGACCGATGGGAGCTTCTCCAGGCCCAGGCAT
TGAGCAAGGAGTTGAGGATGAAGCAGAACCTCCAGAAGTGGCAGCAGTTTAACTCAGACTTGAACAGCAT
CTGGGCCTGGCTGGGGGACACGGAGGAGGAGTTGGAACAGCTCCAGCGTCTGGAACTCAGCACTGACATC
CAGACCATCGAGCTCCAGATCAAAAAGCTCAAGGAGCTCCAGAAAGCTGTGGACCACCGCAAAGCCATCA
TCCTCTCCATCAATCTCTGCAGCCCTGAGTTCACCCAGGCTGACAGCAAGGAGAGCCGGGACCTGCAGGA
TCGCTTGTCGCAGATGAATGGGCGCTGGGACCGAGTGTGCTCTCTGCTGGAGGAGTGGCGGGGCCTGCTG
CAGGATGCCCTGATGCAGTGCCAGGGTTTCCATGAAATGAGCCATGGTTTGCTTCTTATGCTGGAGAACA
TTGACAGAAGGAAAAATGAAATTGTCCCTATTGATTCTAACCTTGATGCAGAGATACTTCAGGACCATCA
CAAACAGCTTATGCAAATAAAGCATGAGCTGTTGGAATCCCAACTCAGAGTAGCCTCTTTGCAAGACATG
TCTTGCCAACTACTGGTGAATGCTGAAGGAACAGACTGTTTAGAAGCCAAAGAAAAAGTCCATGTTATTG
GAAATCGGCTCAAACTTCTCTTGAAGGAGGTCAGTCGTCATATCAAGGAACTGGAGAAGTTATTAGACGT
GTCAAGTAGTCAGCAGGATTTGTCTTCCTGGTCTTCTGCTGATGAACTGGACACCTCAGGGTCTGTGAGT
CCCACATCAGGAAGGAGCACCCCAAACAGACAGAAAACGCCACGAGGCAAGTGTAGTCTCTCACAGCCTG
GACCCTCTGTCAGCAGTCCACATAGCAGGTCCACAAAAGGTGGCTCCGATTCCTCCCTTTCTGAGCCAGG
GCCAGGTCGGTCCGGCCGCGGCTTCCTGTTCAGAGTCCTCCGAGCAGCTCTTCCCCTTCAGCTTCTCCTG
CTCCTCCTCATCGGGCTTGCCTGCCTTGTACCAATGTCAGAGGAAGACTACAGCTGTGCCCTCTCCAACA
ACTTTGCCCGGTCATCCACCCCATGCTCAGATACACGAATGGCCCTCCTCCACTCTGAACTAAGCAGATG
CCATCTGCAGAAGTGCTGGTAGCATAAGGAGGATCGGGTCATAAGCAATCCCAAACTACCAACAAGAGGA
CCTTGATCTTGGCGAAAGCCATCGGTGTGGCAGCTTTAGCCCTCCTCCAGATCACATGTGTGCAAATTAT
GGCTTCAGAGGGTGGAAGATAAACAGTGACGGGGGAACAAACAGACAACAAGAAGGTTTGGAAGAAATCT
GGTTTGAGACTCTGAACCTTAGCACTAAGGAGATTGAGTAAGGACCTCCAAAGTTCCCCGGACTCATGAA
TTCTGGGCCCTTGGCATTCGTGTGCACAGCCAAGGACTTCAGTAGACCATCTGGGCAGCTTTCCCATGGT
GCTGCTCCAACCATCAGATAAATGACCCTCCCCAAGCACCATGTCAGTGTCGTACAATCTACCAACCAAC
CAGTGCTGAAGAGATTTTAGAACCTTGTAACATACAATTTTTAAGAGCTTATATGGCAGCTTCCTTTTTA
CCTTGTTTTCCTTTGGGGCATGATGTTTTAACCTTTTGCTTTAGAAGCACAAGCTGTAAATCTAAAAGGC
ACTTTTTTTTTAGAGGTATAAGAAAAACTAGATGTAATAAATAAGATCATGGAAGGCTTTATGTGAAAAAA
GTTGAATGTTATAGTAAAAAAAAAAA

Human SYNE1 mRNA sequence - var16 (public gi: 6330956) (SEQ ID NO: 198)

CTCGATTTGTGCCGTCAGTCTAACAACCTGTGCTTGCAAAGGGAAGAGGATCTTCAGAGAACAAGAGATT
ACCATGACTGTATGAATGTTGTTGAAGTGTTCCTAGAAAAATTTACTACAGAATGGGATAACTTGGCCAG
ATCTGATGCAGAGAGTACAGCTGTCCACCTGGAAGCTTTGAAAAAGTTAGCATTGGCATTGCAGGAGAGA
AAGTATGCTATTGAAGATCTGAAAGATCAAAAGCAGAAAATGATAGAGCATCTGAATTTAGATGACAAGG
AGTTAGTCAAAGAACAGACGAGTCATTTAGAGCAACGTTGGTTTCAGCTTGAGGACCTCATTAAAAGGAA
AATCCAAGTGTCAGTCACCAACTTGGAGGAGTTAAATGTGGTGCAGTCCAGATTTCAGGAGCTAATGGAG
TGGGCAGAAGAGCAACAACCCAACATCGCCGAGGCCCTTAAGCAGAGCCCTCCTCCAGATATGGCTCAGA
ACCTTCTCATGGATCACCTGGCCATCTGCAGTGAACTGGAGGCCAAGCAGATGCTCCTGAAATCGCTTAT
AAAGGACGCAGACAGGGTCATGGCAGATCTTGGTCTCAATGAGCGACAGGTCATCCAGAAGGCTCTCTCT
GATGCACAAAGCCACGTGAATTGTCTCAGTGACTTAGTGGGCCAGCGAAGAAAGTACTTAAACAAAGCCT
TGTCCGAGAAAACCCAGTTTCTCATGGCAGTGTTCCAGGCCACCAGCCAAATTCAGCAACATGAGCGAAA
GATAATGTTCCGTGAACACATCTGTCTGTTACCAGATGATGTGAGCAAACAAGTCAAAACATGTAAGAGT
GCACAAGCCAGCCTCAAGACTTACCAAAATGAAGTCACTGGACTTTGGGCCCAGGGTCGCGAACTAATGA
AGGAAGTCACAGAGCAGGAAAAGAGTGAAGTGCTGGGGAAGCTTCAGGAATTGCAGAGTGTCTATGACAG
TGTTTTACAAAAGTGCAGTCACCGGTTACAAGAACTAGAGAAGAATTTGGTTTCTAGGAAGCATTTTAAG
GAAGATTTTGATAAAGCTTGCCACTGGCTAAAACAAGCAGATATTGTTACATTTCCTGAAATCAACCTAA
TGAATGAGAGTACTGAGCTTCATACACAACTGGCTAAATACCAAAACATTCTTGAACAATCTCCAGAATA
TGAAAATCTTCTACTTACGCTGCAGAGAACTGGGCAGACCATATTACCATCGCTGAATGAAGTCGATCAT
TCCTACCTCAGTGAAAAGCTAAATGCTTTGCCTCGACAATTTAATGTAATTGTTGCCTTGGCTAAAGACA
AGTTCTATAAAGTCCAGGAAGCAATTCTTGCTCGGAAGGAATATGCTTCCTTGATTGAGTTGACAACCCA
GTCTCTCAGTGAACTTGAAGCCCAATTCTTGAGGATGAGCAAAGTTCCCACCGACCTGGCCGTTGAGGAG
GCTCTTTCTCTGCAAGATGGTTGCAGAGCCATTCTGGACGAGGTGGCGGGCCTTGGGGAGGCGGTGGATG
AACTGAACCAGAAAAAAGAAGGTTTTCGCAGCACAGGTCAGCCTTGGCAGCCAGACAAGATGCTGCACCT
TGTCACCTTATATCACAGGCTGAAGCGACAAACAGAACAGAGGGTTAGCTTATTAGAAGACACCACCAGT
GCTTACCAAGAACACGAGAAGATGTGCCAACAGCTGGAGAGACAACTGAAGTCTGTAAAAGAGGAGCAGT
CCAAAGTGAATGAGGAAACGCTGCCTGCAGAGGAGAAGCTCAAAATGTATCACTCCCTGGCAGGAAGTCT
CCAGGACTCAGGGATTGTACTGAAACGAGTAACCATACATCTTGAAGATCTTGCCCCACACCTTGACCCC
TTGGCTTATGAGAAAGCCAGGCATCAGATCCAGTCCTGGCAAGGGGAGTTAAAACTGTTGACTTCTGCCA
TTGGTGAGACGGTGACAGAATGTGAGAGCCGAATGGTGCAGAGTATAGACTTCCAGACTGAGATGAGTCG
CTCCCTGGACTGGCTGAGGAGAGTGAAGGCAGAGCTCAGTGGGCCGGTGTACCTAGACCTCAACCTGCAG

Figure 36 part - 110

GACATCCAAGAGGAAATCAGAAAAATCCAAATTCATCAGGAAGAGGTCCAGTCCAGCTTGAGAATCATGA
ATGCGCTGAGTCACAAGGAAAAGGAGAAGTTCACAAAGGCCAAGGAGCTGATTTCTGCGGATTTAGAACA
CAGCCTCGCTGAGCTCTCAGAGCTGGATGGAGACATCCAGGAAGCCTTACGCACCAGACAGGCTACCTTG
ACTGAAATATATAGCCAGTGTCAAAGGTATTATCAGGTATTTCAAGCAGCCAATGACTGGCTTGAGGATG
CCCAAGAAATGTTACAGCTGGCAGGCAATGGCCTAGACGTGGAGAGCGCAGAGGAAAATCTCAAAAGCCA
CATGGAATTTTTCAGTACAGAGGATCAGTTCCATAGTAACCTGGAGGAGCTCCACAGCCTGGTAGCCACC
CTGGACCCACTCATCAAGCCAACCGGCAAAGAAGACCTAGAACAGAAAGTGGCTTCTCTGGAACTCAGGA
GCCAGAGGATGAGCCGGGACTCTGGTGCCCAAGTGGATCTCTTGCAGAGATGCACAGCTCAATGGCACGA
TTACCAGAAAGCAAGGGAAGAGGTTATTGAATTGATGAATGATACAGAAAAGAAATTGTCTGAGTTTTCT
TTGTTGAAGACTTCGTCTAGTCATGAAGCGGAAGAAAAATTGTCAGAACACAAGGCTTTAGTGTCAGTGG
TTAACTCTTTCCATGAGAAAATTGTGGCCCTTGAGGAAAAAGCTTCACAACTGGAGAAAACCGGAAATGA
TGCCAGCAAAGCCACCCTGAGCAGGTCAATGACCACCGTCTGGCAGCGCTGGACACGCCTTCGAGCTGTG
GCCCAGGACCAGGAGAAGATCCTGGAAGATGCAGTGGATGAGTGGACGGGCTTTAACAACAAGGTTAAAA
AGGCCACTGAAATGATTGATCAGCTGCAAGATAAGTTACCTGGAAGTTCAGCAGAGAAAGCATCGAAAGC
AGAGCTCTTAACTCTTCTTGAATACCACGACACGTTCGTTCTGGAGCTGGAGCAGCAGCAGTCGGCCTTG
GGCATGCTGCGGCAGCAAACCCTGAGCATGCTCCAGGATGGAGCCGCCCCAACCCCTGGGGAAGAGCCTC
CGCTCATGCAGGAAATCACCGCCATGCAAGATCGGTGCCTGAACATGCAGGAGAAAGTGAAGACTAATGG
AAAGTTGGTGAAGCAAGAGCTGAAGGACCGAGAAATGGTGGAGACTCAGATCAATTCTGTGAAATGTTGG
GTTCAGGAAACGAAAGAATATTTAGGGAATCCAACAATAGAAATAGATGCTCAACTTGAAGAACTTCAGA
TTCTCCTAACAGAAGCCACAAATCACCGACAGAACATTGAAAAAATGGCAGAAGAACAGAAGGAGAAGTA
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GGCAAATTCAGAAGTTAGCTAAAGACCTCACAACTATTCTAACTAAGCTGAAAGCGAAGACAGATAATGT
AGTTCAAGCTAAAACTGACCAAAAGGTGCTGGGAGAGGAATTAGATGGCTGTAATTCAAAGTTAATGGAA
TTAGATGCAGCAGTACAGAAATTCTTGGAACAGAATGGCCAACTGGGTAAGCCACTGGCCAAGAAGATAG
GAAAACTGACTGAACTTCACCAGCAGACCATTAGACAAGCTGAGAATCGGCTCTCCAAGCTCAATCAGGC
AGCATCACATTTAGAAGAATACAATGAAATGCTTGAATTAATTTTGAAGTGGATTGAAAAAGCTAAAGTC
TTGGCTCATGGAACTATTGCATGGAATTCTGCAAGCCAGCTTCGGGAACAATATATTTTGCATCAGGTAA
CCTTAGGAAAAATAATCTTTAAAAAGTAACCAAGGGCAATTTGATTTAACTGGGTAGACTGACACAACAC
TTAGAGGGCTGTGATGTAAAATTTTTGGAGCTACCAGATAAAAAGAATGCTAAGGTACCCCTAAGTTGTT
CAGTAGTTGGACAGAAAGGAGCTTCTCATGAAATTTCATGAAATTGAATAAATAAATATCCTTGATCTTC
CCTAAACCTACCTTACACCAAGACCCAAACCAATCAGCCTTGTAGAACTCATTTTCTGTAGCTTCTTTGA
AATAATTATCTGCAGGGATCTGGTGGGAAATTCTTTCCTGTGAAGAGATGCAATGAAGTGTGGAAAGATT
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TTATGAGATCAAGTGGTTTAAGGTACACACGTGCAAACGTCTGCCTGGCACATGCAGGTGCTCAGTGGGA
GATCTCCCGCCTCCTCCCTCAGCCCTCACCCAGGCCTGTCATCTGGCCTTCCACAGGAGGTCGGGCAGCC
CAGAGCAAGCCATGAGTCCACATCACATGCTGGCTATGTTAGTTCATTTCCTCTGAAGTTACATGAGAAA
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GACACAGATAGTTAATAGGCTAGTTATCATATAATAAAATATAGGGTGACTTTTATAGGAGTTACATGGG
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TTCCATTCTTGTTTACAGGGTTCTAGATCAAAGCCTCATTTTTCCATTTTTGGAATGCTTTAACAGCTTC
TAATTTTTCCCTATATTCACAGTCTTTCTTCTCTGATCAATCTTGCGTATTCTTCCCACAATGTCTTTCT
TAAGCAACTCCAATCTTTTGCTTTAAGATATGCTTAGATATGAACAGACAGGACTTAAGTTACCACTGAT
TTGAAAACAATGAAAAAAAGCCAACATCCTTAGAAGTCTAGAAATGCAAATTTCAGCAAAAAAAGAGAGG
AAGAAAGACAAACTTAACTGTCACATTCATACTGTTTCTTTCAAGTTCATATTTAAGGAAGTGAGAGCTC
TCAAACATTGCTGGTATCCTGGTAAAATCTCTTTGAAAAATAATTGGCAAAATGTATGGTGATTGTCAAA
AATGTTGCTACTCTGGGCCACGTGCGGTGGCTCACACCTGTAGTCCCAGCACTTTGGGAGGCCGAGGTGG
GTGGATCACAGGGTCAGGAGTTCGGGACCGGCTTGGCCGGTATGGTGAAGCCCCATCTCTACTAGGAGTG
CAAAAGTCAGCTGGGCGTGGTGGTGGGCGCCTGTAGTCCCAGCTACTCGGGAATCTGAGGCGGGAGAATC
GCTTGAACTCGGGAGGTGGAGGTTGCAGTGAGCCAAGATCATGCCACTGCACTCCAGCCTGGGTGACAGT
GAGACTCCATCTC

Human SYNE1 mRNA sequence - var17 (public gi: 20521661) (SEQ ID NO: 199)

GTTGGATTTCTCTAATGGAAAATGTTATTCAGAAGGATGAAGATAATATTAAAAATTCCATAGGTTACAA
GGCAATTCATGAATACCTTCAGAAATATAAGGGTTTTAAGATAGACATTAACTGTAAACAGCTGACAGTG
GATTTTGTGAACCAGTCCGTGCTACAAATCAGCAGTCAGGATGTGGAAAGTAAGCGTAGTGATAAGACTG
ATTTTGCTGAGCAACTTGGAGCAATGAATAAAAGTTGGCAAATTCTGCAAGGTCTAGTAACTGAGAAGAT
CCAGCTGTTGGAAGGCTTATTGGAATCTTGGTCAGAATATGAAAATAATGTACAATGTCTGAAAACATGG
TTTGAAACCCAGGAAAAGAGACTAAAACAACAGCATCGAATTGGAGATCAGGCTTCTGTTCAAAATGCAC
TGAAAGACTGTCAGGATCTGGAAGATTTGATTAAAGCAAAAGAAAAAGAAGTAGAGAAAATTGAGCAGAA
TGGACTTGCTTTGATTCAGAACAAGAAAGAAGACGTCTCTAGCATTGTCATGAGCACACTGCGAGAGCTC
GGCCAAACCTGGGCAAATTTAGATCACATGGTTGGACAATTAAAGATACTGCTGAAATCAGTGCTTGACC

Figure 36 part - 111

AATGGAGTAGTCACAAAGTGGCCTTTGACAAGATAAACAGTTACCTCATGGAGGCCAGATACTCTCTTTC
CCGATTCCGTCTGCTGACTGGCTCCTTAGAAGCTGTGCAAGTTCAGGTGGACAATCTTCAGAATCTCCAA
GATGATCTGGAAAAACAGGAAAGGAGCTTACAGAAATTTGGCTCTATCACCAACCAATTATTAAAAGAGT
GTCACCCACCCGTGACAGAAACTCTTACCAATACACTGAAAGAAGTCAACATGAGATGGAATAACTTGCT
GGAAGAGATTGCTGAGCAGCTACAGTCCAGCAAGGCCCTACTTCAGCTTTGGCAAAGATACAAGGACTAC
TCCAAACAGTGTGCTTCGACAGTTCAGCAGCAGGAGGATCGAACCAATGAGCTGTTGAAGGCAGCCACAA
ACAAGGACATTGCCGATGATGAGGTTGCCACATGGATTCAAGATTGCAACGACCTCCTCAAAGGACTGGG
CACAGTTAAAGATTCCCTCTTTGTTCTCCATGAGCTGGGAGAGCAACTGAAGCAACAAGTGGATGCTTCC
GCAGCATCAGCTATTCAATCGGATCAACTCTCTTTGAGTCAACACTTGTGTGCCCTGGAGCAAGCTCTCT
GCAAACAGCAGACTTCATTACAGGCTGGAGTTCTTGATTATGAAACCTTTGCCAAGAGTTTAGAAGCTTT
GGAGGCCTGGATAGTGGAAGCTGAAGAAATACTACAAGGGCAGGACCCTAGCCACTCATCTGACCTCTCC
ACAATCCAGGAAAGGATGGAAGAACTTAAGGGACAGATGTTAAAATTCAGCAGCATGGCTCCAGATTTAG
ACCGTCTAAATGAGCTTGGATATAGGTTACCCTTGAATGATAAGGAAATCAAAAGAATGCAGAATCTGAA
CCGCCATTGGTCTCTGATCTCCTCTCAGACTACAGAAAGATTCAGCAAGTTGCAGTCATTTTTGCTACAA
CATCAGACTTTCTTGGAAAAATGTGAAACATGGATGGAATTCCTAGTTCAGACAGAACAAAAGTTAGCAG
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CCCAGCAGAGGCGGGGGATCATTGACAGCCAGATTCGCCAGTGGCAGCGCTATAGGGAGATGGCAGAAAA
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ACATCCTGACTGTGGAGGCTGGCAAGCAACTCCTTCTCTCGGCGGACAGTGGCGCTGAGGCCGCCTTGCA
GGCCGAACTCGCTGAAATCCAAGAGAAATGGAAATCAGCCAGCATGCGGCTGGAAGAACAGAAGAAAAAA
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TGAACATTTTTCTGAGTGTGATGTTCAAGCTAAAATAAAGCAACTCAAGGCCTTCCAGCAGGAAATTTCA
CTGAACCACAATAAGATTGAGCAGATAATTGCCCAAGGAGAACAGCTGATAGAAAAGAGTGAGCCCTTGG
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AAGATACCATAAGAAACTGATCCGCCTGCCTCTCCCAGACGATGAGCACGACCTCTCAGACAGGGAGCTG
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CACAGCCTTCCTCCAATCTCTCCCTCTCGCTCGCTCAGCCCCTCCGGAGCGAGCGGTCAGGACGAGACAC
CCCAGCTAGTGTGGACTCCATCCCCCTGGAGTGGGATCACGACTATGACCTCAGTCGGGACCTGGAGTCT
GCAATGTCCAGAGCTCTGCCCTCTGAGGATGAAGAAGGTCAGGATGACAAAGATTTCTACCTCCGGGGAG
CTGTTGCCTTATCAGGGGACCACAGTGCCCTAGAGTCACAGATCCGACAACTGGGCAAAGCCCTGGATGA
TAGCCGCTTTCAGATACAGCAAACCGAAAATATCATTCGCAGCAAAACTCCCACGGGGCCGGAGCTAGAC
ACCAGCTACAAAGGCTACATGAAACTGCTGGGCGAATGCAGTAGCAGTATAGACTCCGTGAAGAGACTGG
AGCACAAACTGAAGGAGGAAGAGGAGAGCCTTCCTGGCTTTGTTAACCTGCATAGTACCGAAACCCAAAC
GGCTGGTGTGATTGACCGATGGGAGCTTCTCCAGGCCCAGGCATTGAGCAAGGAGTTGAGGATGAAGCAG
AACCTCCAGAAGTGGCAGCAGTTTAACTCAGACTTGAACAGCATCTGGGCCTGGCTGGGGGACACGGAGG
AGGAGTTGGAACAGCTCCAGCGTCTGGAACTCAGCACTGACATCCAGACCATCGAGCTCCAGATCAAAAA
GCTCAAGGAGCTCCAGAAAGCTGTGGACCACCGCAAAGCCATCATCCTCTCCATCAATCTCTGCAGCCCT
GAGTTCACCCAGGCTGACAGCAAGGAGAGCCGGGACCTGCAGGATCGCTTGTCGCAGATGAATGGGCGCT
GGGACCGAGTGTGCTCTCTGCTGGAGGAGTGGCGGGGCCTGCTGCAGGATGCCCTGATGCAGTGCCAGGG
TTTCCATGAAATGAGCCATGGTTTGCTTCTTATGCTGGAGAACATTGACAGAAGGAAAAATGAAATTGTC
CCTATTGATTCTAACCTTGATGCAGAGATACTTCAGGACCATCACAAACAGCTTATGCAAATAAAGCATG

Figure 36 part - 112

AGCTGTTGGAATCCCAACTCAGAGTAGCCTCTTTGCAAGACATGTCTTGCCAACTACTGGTGAATGCTGA
AGGAACAGACTGTTTAGAAGCCAAAGAAAAAGTCCATGTTATTGGAAATCGGCTCAAACTTCTCTTGAAG
GAGGTCAGTCGTCATATCAAGGAACTGGAGAAGTTATTAGACGTGTCAAGTAGTCAGCAGGATTTGTCTT
CCTGGTCTTCTGCTGATGAACTGGACACCTCAGGGTCTGTGAGTCCCACATCAGGAAGGAGCACCCCAAA
CAGACAGAAAACGCCACGAGGCAAGTGTAGTCTCTCACAGCCTGGACCCTCTGTCAGCAGTCCACATAGC
AGGTCCACAAAAGGTGGCTCCGATTCCTCCCTTTCTGAGCCAGGGCCAGGTCGGTCCGGCCGCGGCTTCC
TGTTCAGAGTCCTCCGAGCAGCTCTTCCCCTTCAGCTTCTCCTGCTCCTCCTCATCGGGCTTGCCTGCCT
TGTACCAATGTCAGAGGAAGACTACAGCTGTGCCCTCTCCAACAACTTTGCCCGGTCATTCCACCCCATG
CTCAGATACACGAATGGCCCTCCTCCACTCTGAACTAAGCAGATGCCATCTGCAGAAGTGCTGGTAGCAT
AAGGAGGATCGGGTCATAAGCAATCCCAAACTACCAACAAGAGGACCTTGATCTTGGCGAAAGCCCTCGG
TGTGGCAGCTTTAGCCCTCCTCCAGATCACATGTGTGCAAATTATGGCTTCAGAGGTGGAAGATAAACAG
TGACGGGGGAACAAACAGACAACAAGAAGGTTTGGAAGAAATCTGGTTTGAGACTCTGAACCTTAGCACT
AAGGAGATTGAGTAAGGACCTCCAAAGTTCCCCGGACTCATGAATTCTGGGCCCTTGGCCCATTCTGTGC
ACAGCCAAGGACTTCAGTAGACCATCTGGGCAGCTTTCCCATGGTGCTGCTCCAACCATCAGATAAATGA
CCCTCCCAAGCACCATGTCAGTGTCGTACAATCTACCAACCAACCAGTGCTGAAGAGATTTTAGAACCTT
GTAACATACAATTTTTAAGAGCTTATATGGCAGCTTCCTTTTTACCTTGTTTTCCTTTGGGGCATGATGT
TTTAACCTTTGCTTTAGAAGCACAAGCTGTAAATCTAAAAGGCACTTTTTTTTAGAGGTATAAAGAAAAA
CTAGATGTAATAAATAAGATCATGGAAGGCTTTATGTGAAAAAAGTTGAATGTTATAGT

Human SYNE1 mRNA sequence - var18 (public gi: 28195688) (SEQ ID NO: 200)

TGTTCTCACGAGGGGGCCAGCTTGGGGCTTGACTGAGCAGGAGCTTCCATGGTCCCACACGTAGTATGAC
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AAGTGGCTACCAAGTAGAAAGTGGTCATGGGGGGTGAAGGTTAAACACAATAACGGACACACAGAACTTA
CACAGGGCATTTTATGCCAAGCTATATTGAATATCTATATCCCTCTACCTGCCCGTCAATGTCATGAATA
TTGACAATTCACTCTAGACCCTGCTAGAAGAATCCAAAGAAATTGACAGTGAGCTGGAAGCAATGACTGA
GAAATTACAGTACCTCACTAGCGTGTACTGTACAGAAAAAATGTCTCAGCAAGTGGCAGAACTGGGACGG
GAGACTGAGGAGTTGCGACAGATGATCAAAATTCGTTTGCAGAACCTCCAAGATGCAGCTAAGGATATGA
AAAAATTTGAAGCAGAGTTGAAAAAGTTACAAGCTGCCTTGGAGCAAGCCCAGGCAACACTGACTTCTCC
AGAAGTTGGACGTCTCAGTCTCAAGGAGCAGCTCTCTCATCGGCAGCATTTGTTGTCTGAGATGGAGTCA
CTGAAGCCGAAGGTGCAAGCAGTGCAGCTCTGCCAGAGTGCCCTCCGGATCCCCGAGGATGTGGTTGCCA
GCTTACCTCTCTGTCATGCTGCTCTGCGGCTGCAGGAAGAGGCCAGCCGGCTGCAGCACACCGCCATCCA
GCAGTGTAACATCATGCAGGAAGCTGTGGTACAATATGAACAATATGAGCAAGAAATGAAACATCTCCAG
CAACTGATAGAAGGAGCTCACAGAGAGATTGAGGATAAACCTGTTGCCACCAGTAACATACAGGAGCTGC
AGGCTCAGATTTCTCGGCATGAGGAGCTGGCGCAGAAAATTAAGGGCTACCAGGAGCAGATCGCTTCTTT
GAATTCCAAGTGCAAGATGCTGACGATGAAAGCCAAGCACGCCACCATGCTGCTGACGGTGACCGAGGTC
GAGGGGCTGGCGGAAGGGACAGAGGACCTGGATGGGGAGCTCCTCCCCACGCCTTCGGCCCACCCCTCTG
TGGTCATGATGACTGCAGGTCGCTGTCACACTTTGCTGTCACCGGTCACTGAGGAGTCTGGGGAGGAGGG
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GTTAACCAGGACATTGCATATTACCAAGCCTTGTCTGCTGAGAGGTTGCAGACAGATGCTGCAAAAATTC
ACCCCAGCACATCCGCATCCCAGGAGTTCTATGAACCGGGATTGGAGCCATCCGCTACTGCCAAACTGGG
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TTGGAGCGCCAGCAGAAGTACCAGGACTCCCTCCAGTCCATCTCTACGAAGATGGAGGCCATTGAGCTGA
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TCTTGTGAGGCCGACCCTGCGGAGCAGCTGGCCTTGCAGTCCACGCTCACTGTCTTAGCCGAGCGAATGT
CCACCATCAGGATGAAAGCCTCGGGGAAACGGCAGCTTTTGGAGGAGAAGTTGAATGATCAGCTGGAGGA
ACAAAGGCAGGAACAGGCCCTGCAGAGGTATCGCTGTGAAGCCGATGAGCTGGACAGCTGGCTCTTGAGT
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GAACCTGCTGCTGGAGGGCAAAGCTCACACCAAGGACGAGGCCGAGCAGCTGGCTGGAAAGCTGAGAAGG
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AGGAGAAGGAGGAGAGCGATGTTGACCTAACAGCCACGCAGAGCCCCGGCGTCCAGGAATGGCTGGCCCA
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CAGAGACCTCTGGTGATGCTGGCGAAAAACCTGATGTGTTATCCCAGGAGTTGGGGATGGAAGGGGAGAA
ATCATCCGCTGAAGACCAGATGAGAATGAAATGGGAAAGCCTACATCAAGAATTTAGTACCAAGCAGAAA
CTACTACAGAATGTTCTGGAACAGGAACAAGAGCAAGTGCTTTATAGCAGGCCAAATCGACTCTTGTCTG
GTGTGCCACTGTACAAAGGGGACGTGCCAACCCAAGATAAATCTGCAGTTACATCTTTGCTGGATGGACT
GAACCAAGCCTTCGAGGAGGTTTCATCCCAGAGTGGAGGGGCAAAGAGGCAGAGTATACACTTGGAGCAG
AAGTTGTATGATGGAGTCTCAGCCACCTCTACTTGGTTGGATGACGTTGAAGAACGTTTATTTGTTGCCA
CAGCACTTTTACCAGAAGAAACAGAGACTTGTCTCTTCAACCAAGAGATTCTTGCCAAAGACATTAAGGA
AATGTCTGAAGAAATGGATAAGAACAAAAACTTGTTTTCCCAAGCTTTTCCAGAGAATGGTGATAATCGA
GATGTTATTGAAGATACTTTGGGTTGTCTTTTGGGCAGGTTATCCTTGCTAGACTCAGTAGTGAATCAAC

Figure 36 part - 113

GATGTCATCAGATGAAAGAAAGACTTCAGCAAATACTAAATTTCCAGAATGATCTGAAAGTGCTGTTTAC
ATCACTGGCTGACAACAAATACATCATTCTGCAAAAACTGGCAAATGTGTTTGAACAGCCCGTAGCAGAA
CAAATAGAGGCAATACAACAGGCTGAAGATGGACTCAAAGAATTTGATGCAGGAATCATTGAATTAAAGA
GGCGTGGTGACGAGCTACAGGTCGAGCAGCCGTCCATGCAAGAACTCTCCAAGCTCCAGGACATGTATGA
TGAGCTGATGATGATCATTGGCTCCCGGAGGAGTGGTCTGAATCAGAACCTTACACTCAAGAGTCAGTAT
GAGAGGGCCCTACAAGATCTGGCTGACCTGCTAGAAACTGGTCAGGAGAAGATGGCAGGAGACCAGAAAA
TCATCGTGTCTTCCAAAGAGGAAATCCAGCAACCACTTGACAAACATAAGGAATACTTTCAGGGCCTGGA
ATCTCATATGATCTTGACTGTAACACTCTTCAGAAAGATAATCAGCTTTGCAGTCCAAAAGGAAACCCAG
TTCCATACAGAGCTGATGGCTCAGGCTTCTGCTGTACTGAAACGGGCTCACAAGAGGGGTGTGGAGCTGG
AGTACATTCTAGAGACGTGGTCCCATCTGGATGAGGACCAGCAGGAGCTCAGCAGACAGCTGGAGGTGGT
GGAAAGCAGCATCCCAAGCGTGGGTCTGGTGGAGGAGAACGAGGACAGGCTTATTGACCGCATAACACTC
TACCAGCATTTAAAATCTAGCCTTAATGAATACCAGCCCAAATTATATCAAGTATTAGATGATGGGAAAC
GACTTCTGATATCCATCAGCTGCTCAGATCTAGAAAGCCAACTAAATCAACTTGGAGAGTGCTGGCTAAG
TAACACCAATAAAATGTCTAAGGAACTTCACAGACTGGAAACAATATTGAAACACTGGACCAGATATCAA
AGTGAATCTGCAGATCTAATTCACTGGTTACAATCTGCAAAAGACCGGCTAGAATTTTGGACTCAGCAAT
CTGTGACAGTCCCACAAGAGCTGGAAATGGTCCGTGATCATCTAAATGCTTTCCTGGAGTTTTCTAAAGA
AGTGGATGCCCAATCTTCCCTGAAATCATCTGTTCTGAGTACTGGAAATCAGCTCCTTCGACTAAAAAAG
GTGGACACAGCCACGCTGCGCTCTGAGTTGTCGCGCATTGATAGCCAGTGGACTGACCTGCTAACCAATA
TCCCAGCCGTCCAGGAGAAGCTCCACCAGCTCCAGATGGATAAACTGCCTTCCCGCCATGCCATTTCTGA
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TGACAGTGGATTTTGTGAACCAGTCCGTGCTACAAATCAGCAGTCAGGATGTGGAAAGTAAGCGTAGTGA
TAAGACTGATTTTGCTGAGCAACTTGGAGCAATGAATAAAAGTTGGCAAATTCTGCAAGGTCTAGTAACT
GAGAAGATCCAGCTGTTGGAAGGCTTATTGGAATCTTGGTCAGAATATGAAAATAATGTACAATGTCTGA
AAACATGGTTTGAAACCCAGGAAAAGAGACTAAAACAACAGCATCGAATTGGAGATCAGGCTTCTGTTCA
AAATGCACTGAAAGACTGTCAGGATCTGGAAGATCTGATTAAAGCAAAAGATAAAGAAGTAGAGAAAATT
GAGCAGAATGGACTTGCTTTGATTCAGACCAAGAAAGAAGACGTCTCTAGCATTGTCATGAGCACACTGC
GAGAGCTCGGCCAAACCTGGGCAAATTTAGATCACATGGTTGGACAATTAAAGATACTGCTGAAATCAGT
GCTTGACCAATGGAGTAGTCACAAAGTGGCCTTTGACAAGATAAACAGTTACCTCATGGAGGCCAGATAC
TCTCTTTCCCGATTCCGTCTGCTGACTGGCTCCTTAGAAGCTGTGCAAGTTCAGGTGGACAATCTTCAGA
ATCTCCAAGATGATCTGGAAAAACAGGAAAGGAGCTTACAGAAATTTGGCTCTATCACCAACCAATTATT
AAAAGAGTGTCACCCACCCGTGACAGAAACTCTTACCAATACACTGAAAGAAGTCAACATGAGATGGAAT
AACTTGCTGGAAGAGATTGCTGAGCAGCTACAGTCCAGCAAGGCCCTACTTCAGCTTTGGCAAAGATACA
AGGACTACTCCAAACAGTGTGCTTCGACAGTTCAGCAGCAGGAGGATCGAACCAATGAGCTGTTGAAGGC
AGCCACAAACAAGGACATTGCCGATGATGAGGTTGCCACATGGATTCAAGATTGCAACGACCTCCTCAAA
GGACTGGGCACAGTTAAAGATTCCCTCTTTGTTCTCCATGAGCTGGGAGAGCAACTGAAGCAACAAGTGG
ATGCTTCCGCAGCATCAGCTATTCAATCGGATCAACTCTCTTTGAGTCAACACTTGTGTGCCCTGGAGCA
AGCTCTCTGCAAACAGCAGACTTCATTACAGGCTGGAGTTCTTGATTATGAAACCTTTGCCAAGAGTTTA
GAAGCTTTGGAGGCCTGGATAGTGGAAGCTGAAGAAATACTACAAGGGCAGGACCCTAGCCACTCATCTG
ACCTCTCCACAATCCAGGAAAGGATGGAAGAACTTAAGGGACAGATGTTAAAATTCAGCAGCATGGCTCC
AGATTTAGACCGTCTAAATGAGCTTGGATATAGGTTACCCTTGAATGATAAGGAAATCAAAAGAATGCAG
AATCTGAACCGCCATTGGTCTCTGATCTCCTCTCAGACTACAGAAAGATTCAGCAAGTTGCAGTCATTTT
TGCTACAACATCAGACTTTCTTGGAAAAATGTGAAACATGGATGGAATTCCTAGTTCAGACAGAACAAAA
GTTAGCAGTAGAGATTTCAGGAAATTATCAGCACCTTTTGGAACAGCAGAGAGCACACGAGTTGTTTCAA
GCCGAGATGTTCAGTCGTCAGCAGATTTTGCACTCAATCATTATTGATGGGCAACGTCTTCTAGAACAAG
GTCAAGTTGATGACAGGGATGAATTCAACCTGAAATTGACACTCCTCAGTAATCAATGGCAGGGAGTGAT
TCGCAGGGCCCAGCAGAGGCGGGGGATCATTGACAGCCAGATTCGCCAGTGGCAGCGCTATAGGGAGATG
GCAGAAAAGCTTCGTAAATGGTTGGTTGAAGTGTCCTACCTCCCCATGAGTGGTCTCGGAAGTGTTCCTA
TACCACTGCAACAAGCAAGGACCCTCTTTGATGAAGTGCAGTTCAAAGAAAAAGTGTTTCTGCGGCAACA
AGGCAGCTACATCCTGACTGTGGAGGCTGGCAAGCAACTCCTTCTCTCGGCGGACAGTGGCGCTGAGGCC
GCCTTGCAGGCCGAACTCGCTGAAATCCAAGAGAAATGGAAATCAGCCAGCATGCGGCTGGAAGAACAGA
AGAAAAAACTAGCCTTCTTGTTGAAAGACTGGGAAAAATGTGAGAAAGGAATAGCAGATTCCCTGGAGAA
ACTACGAACTTTCAAAAAGAAGCTTTCGCAGTCTCTCCCGGATCACCATGAAGAGCTCCATGCAGAACAA
ATGCGTTGCAAGGAATTAGAAAATGCAGTTGGGAGCTGGACAGATGACTTGACCCAGTTGAGCCTGCTGA
AGGACACCCTCTCTGCCTATATCAGTGCTGATGATATCTCCATTCTTAATGAACGCGTAGAGCTTCTGCA
AAGGCAGTGGGAAGAACTATGCCACCAGCTCTCCTTAAGGCGGCAGCAAATAGGTGAAAGATTGAATGAA
TGGGCAGTCTTCAGTGAAAAGAACAAGGAACTCTGTGAGTGGTTGACTCAAATGGAAAGCAAAGTTTCTC
AGAATGGAGACATTCTCATTGAAGAAATGATAGAGAAGCTCAAGAAGGATTATCAAGAGGAAATTGCTAT
TGCTCAAGAGAACAAAATACAGCTCCAACAAATGGGAGAACGACTTGCTAAAGCCAGCCATGAAAGCAAA
GCATCTGAGATTGAATACAAGCTGGGAAAGGTCAACGACCGGTGGCAGCATCTCCTGGACCTCATTGCAG
CCAGGGTGAAGAAGCTGAAGGAGACCCTGGTAGCCGTGCAGCAGCTTGATAAGAACATGAGCAGCCTGAG
GACCTGGCTCGCTCACATCGAGTCAGAGCTGGCCAAGCCAATAGTCTACGATTCCTGTAACTCGGAAGAA
ATACAGAGAAAGCTTAATGAGCAGCAGGAGCTTCAGAGAGACATAGAGAAGCACAGTACAGGTGTTGCAT

Figure 36 part - 114

CTGTCCTCAACCTGTGTGAAGTCCTGCTGCACGACTGTGACGCCTGTGCCACTGATGCCGAGTGTGACTC
TATACAGCAGGCTACGAGAAACCTGGACCGGCGGTGGAGAAACATTTGTGCTATGTCCATGGAAAGGAGG
CTGAAAATCGAAGAGACGTGGCGATTGTGGCAGAAATTTCTGGATGACTATTCACGTTTTGAAGATTGGC
TGAAGTCTTCAGAAAGGACAGCTGCTTTTCCCAGCTCTTCTGGGGTGATCTATACAGTTGCCAAGGAAGA
ACTAAAGAAATTTGAGGCTTTCCAGCGACAGGTCCACGAGTGCCTGACGCAGCTGGAACTGATCAACAAG
CAGTACCGCCGCCTGGCCAGGGAGAACCGCACTGATTCAGCATGTAGCCTCAAACAGATGGTTCACGAAG
GCAACCAGAGATGGGACAACCTGCAAAAGCGTGTCACCTCCATCTTGCGCAGACTCAAGCATTTTATTGG
CCAGCGTGAGGAGTTTGAGACTGCGCGGGACAGCATTCTGGTCTGGCTCACAGAGATGGATCTGCAGCTC
ACTAATATTGAACATTTTTCTGAGTGTGATGTTCAAGCTAAAATAAAGCAACTCAAGGCCTTCCAGCAGG
AAATTTCACTGAACCACAATAAGATTGAGCAGATAATTGCCCAAGGAGAACAGCTGATAGAAAAGAGTGA
GCCCTTGGATGCAGCGATCATCGAGGAGGAACTAGATGAGCTCCGACGGTACTGCCAGGAGGTCTTCGGG
CGTGTGGAAAGATACCATAAGAAACTGATCCGCCTGCCTCTCCCAGACGATGAGCACGACCTCTCAGACA
GGGAGCTGGAGCTGGAAGACTCTGCAGCTCTGTCGGACCTGCACTGGCACGACCGCTCTGCAGACAGCCT
GCTTTCTCCACAGCCTTCCTCCAATCTCTCCCTCTCGCTCGCTCAGCCCCTCCGGAGCGAGCGGTCAGGA
CGAGACACCCCAGCTAGTGTGGACTCCATCCCCCTGGAGTGGGATCACGACTATGACCTCAGTCGGGACC
TGGAGTCTGCAATGTCCAGAGCTCTGCCCTCTGAGGATGAAGAAGGTCAGGATGACAAAGATTTCTACCT
CCGGGGAGCTGTTGCCTTATCAGGGGACCACAGTGCCCTAGAGTCACAGATCCGACAACTGGGCAAAGCC
CTGGATGATAGCCGCTTTCAGATACAGCAAACCGAAAATATCATTCGCAGCAAAACTCCCACGGGGCCGG
AGCTAGACACCAGCTACAAAGGCTACATGAAACTGCTGGGCGAATGCAGTAGCAGTATAGACTCCGTGAA
GAGACTGGAGCACAAACTGAAGGAGGAAGAGGAGAGCCTTCCTGGCTTTGTTAACCTGCATAGTACCGAA
ACCCAAACGGCTGGTGTGATTGACCGATGGGAGCTTCTCCAGGCCCAGGCATTGAGCAAGGAGTTGAGGA
TGAAGCAGAACCTCCAGAAGTGGCAGCAGTTTAACTCAGACTTGAACAGCATCTGGGCCTGGCTGGGGGA
CACGGAGGAGGAGTTGGAACAGCTCCAGCGTCTGGAACTCAGCACTGACATCCAGACCATCGAGCTCCAG
ATCAAAAAGCTCAAGGAGCTCCAGAAAGCTGTGGACCACCGCAAAGCCATCATCCTCTCCATCAATCTCT
GCAGCCCTGAGTTCACCCAGGCTGACAGCAAGGAGAGCCGGGACCTGCAGGATCGCTTGTCGCAGATGAA
TGGGCGCTGGGACCGAGTGTGCTCTCTGCTGGAGGAGTGGCGGGGCCTGCTGCAGGATGCCCTGATGCAG
TGCCAGGGTTTCCATGAAATGAGCCATGGTTTGCTTCTTATGCTGGAGAACATTGACAGAAGGAAAAATG
AAATTGTCCCTATTGATTCTAACCTTGATGCAGAGATACTTCAGGACCATCACAAACAGCTTATGCAAAT
AAAGCATGAGCTGTTGGAATCCCAACTCAGAGTAGCCTCTTTGCAAGACATGTCTTGCCAACTACTGGTG
AATGCTGAAGGAACAGACTGTTTAGAAGCCAAAGAAAAAGTCCATGTTATTGGAAATCGGCTCAAACTTC
TCTTGAAGGAGGTCAGTCGTCATATCAAGGAACTGGAGAAGTTATTAGACGTGTCAAGTAGTCAGCAGGA
TTTGTCTTCCTGGTCTTCTGCTGATGAACTGGACACCTCAGGGTCTGTGAGTCCCACATCAGGAAGGAGC
ACCCCAAACAGACAGAAAACGCCACGAGGCAAGTGTAGTCTCTCACAGCCTGGACCCTCTGTCAGCAGTC
CACATAGCAGGTCCACAAAAGGTGGCTCCGATTCCTCCCTTTCTGAGCCAGGGCCAGGTCGGTCCGGCCG
CGGCTTCCTGTTCAGAGTCCTCCGAGCAGCTCTTCCCCTTCAGCTTCTCCTGCTCCTCCTCATCGGGCTT
GCCTGCCTTGTACCAATGTCAGAGGAAGACTACAGCTGTGCCCTCTCCAACAACTTTGCCCGGTCATTCC
ACCCCATGCTCAGATACACGAATGGCCCTCCTCCACTCTGAACTAAGCAGATGCCATCTGCAGAAGTGCT
GGTAGCATAAGGAGGATCGGGTCATAAGCAATCCCAAACTACCAACAAGAGGACCTTGATCTTGGCGAAA
GCCCTCGGTGTGGCAGCTTTAGCCCTCCTCCAGATCACATGTGTGCAAATTATGGCTTCAGAGGTGGAAG
ATAAACAGTGACGGGGGAACAAACAGACAACAAGAAGGTTTGGAAGAAATCTGGTTTGAGACTCTGAACC
TTAGCACTAAGGAGATTGAGTAAGGACCTCCAAAGTTCCCCGGACTCATGAATTCTGGGCCCTTGGCCCA
TTCTGTGCACAGCCAAGGACTTCAGTAGACCATCTGGGCAGCTTTCCCATGGTGCTGCTCCAACCATCAG
ATAAATGACCCTCCCAAGCACCATGTCAGTGTCGTACAATCTACCAACCAACCAGTGCTGAAGAGATTTT
AGAACCTTGTAACATACAATTTTTAAGAGCTTATATGGCAGCTTCCTTTTTACCTTGTTTTCCTTTGGGG
CATGATGTTTTAACCTTTGCTTTAGAAGCACAAGCTGTAAATCTAAAAGGCACTTTTTTTTAGAGGTATA
AAGAAAAACTAGATGTAATAAATAAGATCATGGAAGGCTTTATGTGAAAAAAGTTGAATGTTATAGT

Human SYNE1 mRNA sequence - var19 (public gi: 28195676) (SEQ ID NO: 201)

CAAGGGGAAACTTTCATCCCCACGCAGGTTATAGCTTTTTGCTCTGCAGAGTCTAACTTTTGCAAGTGGA
AGCTTCATGGTGGTGGCGGAGGACCTGAGTGCCCTGAGGATGGCAGAGGACGGCTGTGTGGATGCAGATC
TCCCAGATTGTAACTGCGATGTCACAAGGGCCAGGGTGAAGAAGCTGAAGGAGACCCTGGTAGCCGTGCA
GCAGCTTGATAAGAACATGAGCAGCCTGAGGACCTGGCTCGCTCACATCGAGTCAGAGCTGGCCAAGCCA
ATAGTCTACGATTCCTGTAACTCGGAAGAAATACAGAGAAAGCTTAATGAGCAGCAGGAGCTTCAGAGAG
ACATAGAGAAGCACAGTACAGGTGTTGCATCTGTCCTCAACCTGTGTGAAGTCCTGCTGCACGACTGTGA
CGCCTGTGCCACTGATGCCGAGTGTGACTCTATACAGCAGGCTACGAGAAACCTGGACCGGCGGTGGAGA
AACATTTGTGCTATGTCCATGGAAAGGAGGCTGAAAATCGAAGAGACGTGGCGATTGTGGCAGAAATTTC
TGGATGACTATTCACGTTTTGAAGATTGGCTGAAGTCTTCAGAAAGGACAGCTGCTTTTCCCAGCTCTTC
TGGGGTGATCTATACAGTTGCCAAGGAAGAACTAAAGAAATTTGAGGCTTTCCAGCGACAGGTCCACGAG
TGCCTGACGCAGCTGGAACTGATCAACAAGCAGTACCGCCGCCTGGCCAGGGAGAACCGCACTGATTCAG
CATGTAGCCTCAAACAGATGGTTCACGAAGGCAACCAGAGATGGGACAACCTGCAAAAGCGTGTCACCTC
CATCTTGCGCAGACTCAAGCATTTTATTGGCCAGCGTGAGGAGTTTGAGACTGCGCGGGACAGCATTCTG
GTCTGGCTCACAGAGATGGATCTGCAGCTCACTAATATTGAACATTTTTCTGAGTGTGATGTTCAAGCTA
AAATAAAGCAACTCAAGGCCTTCCAGCAGGAAATTTCACTGAACCACAATAAGATTGAGCAGATAATTGC

Figure 36 part - 115

CCAAGGAGAACAGCTGATAGAAAAGAGTGAGCCCTTGGATGCAGCGATCATCGAGGAGGAACTAGATGAG
CTCCGACGGTACTGCCAGGAGGTCTTCGGGCGTGTGGAAAGATACCATAAGAAACTGATCCGCCTGCCTC
TCCCAGACGATGAGCACGACCTCTCAGACAGGGAGCTGGAGCTGGAAGACTCTGCAGCTCTGTCGGACCT
GCACTGGCACGACCGCTCTGCAGACAGCCTGCTTTCTCCACAGCCTTCCTCCAATCTCTCCCTCTCGCTC
GCTCAGCCCCTCCGGAGCGAGCGGTCAGGACGAGACACCCCAGCTAGTGTGGACTCCATCCCCCTGGAGT
GGGATCACGACTATGACCTCAGTCGGGACCTGGAGTCTGCAATGTCCAGAGCTCTGCCCTCTGAGGATGA
AGAAGGTCAGGATGACAAAGATTTCTACCTCCGGGGAGCTGTTGCCTTATCAGATGTAATGATCCCCGAA
AGCCCTGAGGCCTATGTAAAACTCACAGAAAATGCAATCAAAAATACCTCCGGGGACCACAGTGCCCTAG
AGTCACAGATCCGACAACTGGGCAAAGCCCTGGATGATAGCCGCTTTCAGATACAGCAAACCGAAAATAT
CATTCGCAGCAAAACTCCCACGGGGCCGGAGCTAGACACCAGCTACAAAGGCTACATGAAACTGCTGGGC
GAATGCAGTAGCAGTATAGACTCCGTGAAGAGACTGGAGCACAAACTGAAGGAGGAAGAGGAGAGCCTTC
CTGGCTTTGTTAACCTGCATAGTACCGAAACCCAAACGGCTGGTGTGATTGACCGATGGGAGCTTCTCCA
GGCCCAGGCATTGAGCAAGGAGTTGAGGATGAAGCAGAACCTCCAGAAGTGGCAGCAGTTTAACTCAGAC
TTGAACAGCATCTGGGCCTGGCTGGGGGACACGGAGGAGGAGTTGGAACAGCTCCAGCGTCTGGAACTCA
GCACTGACATCCAGACCATCGAGCTCCAGATCAAAAAGCTCAAGGAGCTCCAGAAAGCTGTGGACCACCG
CAAAGCCATCATCCTCTCCATCAATCTCTGCAGCCCTGAGTTCACCCAGGCTGACAGCAAGGAGAGCCGG
GACCTGCAGGATCGCTTGTCGCAGATGAATGGGCGCTGGGACCGAGTGTGCTCTCTGCTGGAGGAGTGGC
GGGGCCTGCTGCAGGATGCCCTGATGCAGTGCCAGGGTTTCCATGAAATGAGCCATGGTTTGCTTCTTAT
GCTGGAGAACATTGACAGAAGGAAAAATGAAATTGTCCCTATTGATTCTAACCTTGATGCAGAGATACTT
CAGGACCATCACAAACAGCTTATGCAAATAAAGCATGAGCTGTTGGAATCCCAACTCAGAGTAGCCTCTT
TGCAAGACATGTCTTGCCAACTACTGGTGAATGCTGAAGGAACAGACTGTTTAGAAGCCAAAGAAAAAGT
CCATGTTATTGGAAATCGGCTCAAACTTCTCTTGAAGGAGGTCAGTCGTCATATCAAGGAACTGGAGAAG
TTATTAGACGTGTCAAGTAGTCAGCAGGATTTGTCTTCCTGGTCTTCTGCTGATGAACTGGACACCTCAG
GGTCTGTGAGTCCCACATCAGGAAGGAGCACCCCAAACAGACAGAAAACGCCACGAGGCAAGTGTAGTCT
CTCACAGCCTGGACCCTCTGTCAGCAGTCCACATAGCAGGTCCACAAAAGGTGGCTCCGATTCCTCCCTT
TCTGAGCCAGGGCCAGGTCGGTCCGGCCGCGGCTTCCTGTTCAGAGTCCTCCGAGCAGCTCTTCCCCTTC
AGCTTCTCCTGCTCCTCCTCATCGGGCTTGCCTGCCTTGTACCAATGTCAGAGGAAGACTACAGCTGTGC
CCTCTCCAACAACTTTGCCCGGTCATTCCACCCCATGCTCAGATACACGAATGGCCCTCCTCCACTCTGA
ACTAAGCAGATGCCATCTGCAGAAGTGCTGGTAGCATAAGGAGGATCGGGTCATAAGCAATCCCAAACTA
CCAACAAGAGGACCTTGATCTTGGCGAAAGCCCTCGGTGTGGCAGCTTTAGCCCTCCTCCAGATCACATG
TGTGCAAATTATGGCTTCAGAGGTGGAAGATAAACAGTGACGGGGGAACAAACAGACAACAAGAAGGTTT
GGAAGAAATCTGGTTTGAGACTCTGAACCTTAGCACTAAGGAGATTGAGTAAGGACCTCCAAAGTTCCCC
GGACTCATGAATTCTGGGCCCTTGGCCCATTCTGTGCACAGCCAAGGACTTCAGTAGACCATCTGGGCAG
CTTTCCCATGGTGCTGCTCCAACCATCAGATAAATGACCCTCCCAAGCACCATGTCAGTGTCGTACAATC
TACCAACCAACCAGTGCTGAAGAGATTTTAGAACCTTGTAACATACAATTTTTAAGAGCTTATATGGCAG
CTTCCTTTTTACCTTGTTTTCCTTTGGGGCATGATGTTTTAACCTTTGCTTTAGAAGCACAAGCTGTAAA
TCTAAAAGGCACTTTTTTTTTAGAGGTATAAAGAAAAACTAGATGTAATAAATAAGATCATGGAAGGCTTT
ATGTGAAAAAAGTTGAATGTTATAGT

Human SYNE1 Protein sequence - var1 (public gi: 21753085) (SEQ ID NO: 295)

MVVDDLFEDMKDGVKLLALLEVLSGQKLPCEQGRRMKRIHAVANIGTALKFLEGRKIKLVNINSTDIADG
RPSIVLGLMWTIILYFQIEELTSNLPQLQSLSSSASSVDSIVSSETPSPPSKRKVTTKIQGNAKKALLKW
VQYTAGKQTGIEVKDFGKSWRSGVAFHSVIHAIRPELVDLETVKGRSNRENLEDAFTIAETELGIPRLLD
PEDVDVDKPDEKSIMTYVAQFLKHYPDIHNASTDGQEDDEILPGFPSFANSVQNFKREDRVIFKEMKVWI
EQFERDLTRAQMVESNLQDKYQSFKHFRVQYEMKRKQIEHLIQPLHRDGKLSLDQALVKQSWDRVTSRLF
DWHIQLDKSLPAPLGTIGAWLYRAEVALREEITVQQVHEETANTIQRKLEQHKDLLQNTDAHKRAFHEIY
RTRSVNGIPVPPDQLEDMAERFHFVSSTSELHLMKMEFLELKYRLLSLLVLAESKLKSWIIKYGRRESVE
QLLQNYVSFIENSKFFEQYEVTYQILKQTAEMYVKADGSVEEAENVMKFMNETTAQWRNLSVEVRSVRSM
LEEVISNWDRYGNTVASLQAWLEDAEKMLNQSENAKKDFFRNLPHWIQQHTAMNDAGNFLIETCDEMVSR
DLKQQLLLLNGRWRELFMEVKQYAQADEMDRMKKEYTDCVVTLSAFATEAHKKLSEPLEVSFMNVKLLIQ
DLEDIEQRVPVMDAQYKIITKTAHLITKESP

Human SYNE1 Protein sequence - var2 (public gi: 19584385) (SEQ ID NO: 296)

KLLIQDLEDIEQRVPVMDAQYKIITKTAHLITKESPQEEGKEMFATMSKLKEQLTKVKECYSPLLYESQQ
LLIPLEELEKQMTSFYDSLGKINEIITVLEREAQSSALFKQKHQELLACQENCKKTLTLIEKGSQSVQKF
VTLSNVLKHFDQTRLQRQIADIHVAFQSMVKKTGDWKKHVETNSRLMKKFEESRAELEKVLRIAQEGLEE
KGDPEELLRRHTEFFSQLDQRVLNAFLKACDELTDILPEQEQQGLQEAVRKLHKQWKDLQGEAPYHLLHL
KIDVEKNRFLASVEECRTELDRETKLMPQEGSEKIIKEHRVFFSDKGPHHLCEKRLQLIEELCVKLPVRD
PVRDTPGTCHVTLKELRAAIDSTYRKLMEDPDKWKDYTSRFSEFSSWISTNETQLKGIKGEAIDTANHGE
VKRAVEEIRNGVTKRGETLSWLKSRLKVLTEVSSENEAQKQGDELAKLSSSFKALVTLLSEVEKMLSNFG
DCVQYKEIVKNSLEELISGSKEVQEQAEKILDTENLFEAQQLLLHHQQKTKRISAKKRDVQQQIAQAQQG
EGGLPDRGHEELRKLESTLDGLERSRERQERRIQVTLRKWERFETNKETVVRYLFQTGSSHERFLSFSSL

Figure 36 part - 116

ESLSSELEQTKEFSKRTESIAVQAENLVKEASEIPLGPQNKQLLQQQAKSIKEQVKKLEDTLEEDIKPME
MVKTKWDHFGSNFETLSVWITEKEKELNALETSSSAMDMQISQIKVTIQEIESKLSSIVGLEEEAQSFAQ
FVTTGESARIKAKLTQIRRYGEELREHAQCLEGTILGHLSQQQKFEENLRKIQQSVSEFEDKLAVPIKIC
SSATETYKVLQEHMDLCQALESLSSAITAFSASARKVVNRDSCVQEAAALQQQYEDILRRAKERQTALEN
LLAHWQRLEKELSSFLTWLERGEAKASSPEMDISADRVKVEGELQLIQASSRKCEEGKNKMLFVTVTLFK
IIK

Human SYNE1 Protein sequence - var3 (public gi: 17861378) (SEQ ID NO: 297)
MGERLAKASHESKASEIEYKLGKVNDRWQHLLDLIAARVKKLKETLVAVQQLDKNMSSLRTWLAHIESEL
AKPIVYDSCNSEEIQRKLNEQQELQRDIEKHSTGVASVLNLCEVLLHDCDACATDAECDSIQQATRNLDR
RWRNICAMSMERRLKIEETWRLWQKFLDDYSRFEDWLKSSERTAAFPSSSGVIYTVAKEELKKFEAFQRQ
VHECLTQLELINKQYRRLARENRTDSACSLKQMVHEGNQRWDNLQKRVTSILRRLKHFIGQREEFETARD
SILVWLTEMDLQLTNIEHFSECDVQAKIKQLKAFQQEISLNHNKIEQIIAQGEQLIEKSEPLDAAIIEEE
LDELRRYCQEVFGRVERYHKKLIRLPLPDDEHDLSDRELELEDSAALSDLHWHDRSADSLLSPQPSSNLS
LSLAQPLRSERSGRDTPASVDSIPLEWDHDYDLSRDLESAMSRALPSEDEEGQDDKDFYLRGAVALSDVM
IPESPEAYVKLTENAIKNTSGDHSALESQIRQLGKALDDSRFQIQQTENIIRSKTPTGPELDTSYKGYMK
LLGECSSSIDSVKRLEHKLKEEEESLPGFVNLHSTETQTAGVIDRWELLQAQALSKELRMKQNLQKWQQF
NSDLNSIWAWLGDTEEELEQLQRLELSTDIQTIELQIKKLKELQKAVDHRKAIILSINLCSPEFTQADSK
ESRDLQDRLSQMNGRWDRVCSLLEEWRGLLQDALMQCQGFHEMSHGLLLMLENIDRRKNEIVPIDSNLDA
EILQDHHKQLMQIKHELLESQLRVASLQDMSCQLLVNAEGTDCLEAKEKVHVIGNRLKLLLKEVSRHIKE
LEKLLDVSSSQQDLSSWSSADELDTSGSVSPTSGRSTPNRQKTPRGKCSLSQPGPSVSSPHSRSTKGGSD
SSLSEPGPGRSGRGFLFRVLRAALPLQLLLLLLIGLACLVPMSEEDYSCALSNNFARSFHPMLRYTNGPP
PL

Human SYNE1 Protein sequence - var4 (public gi: 17861386) (SEQ ID NO: 298)
MELDAAVQKFLEQNGQLGKPLAKKIGKLTELHQQTIRQAENRLSKLNQATSHLEEYNEMLELILKWIEKA
KVLAHGTIAWNSASQLRKQYILHQTLLEESKEIDSELEAMTEKLQYLTSVYCTEKMSQQVAELGRETEEL
RQMIKIRLQNLQDAAKDMKKFEAELKKLQAALEQAQATLTSPEVGRLSLKEQLSHRQHLLSEMESLKPKV
QAVQLCQSALRIPEDVVASLPLCHAALRLQEEASRLQHTAIQQCNIMQEAVVQYEQYEQEMKHLQQLIEG
AHREIEDKPVATSNIQELQAQISRHEELAQKIKGYQEQIASLNSKCKMLTMKAKHATMLLTVTEVEGLAE
GTEDLDGELLPTPSAHPSVVMMTAGRCHTLLSPVTEESGEEGTNSEISSPPACRSPSPVANTDASVNQDI
AYYQALSAERLQTDAAKIHPSTSASQEFYEPGLEPSATAKLGDLQRSWETLKNVISEKQRTLYEALERQQ
KYQDSLQSISTKMEAIELKLSESPEPGRSPESQMAEHQALMDEILMLQDEINELQSSLAEELVSESCEAD
PAEQLALQSTLTVLAERMSTIRMKASGKRQLLEEKLNDQLEEQRQEQALQRYRCEADELDSWLLSTKATL
DTALSPPKEPMDMEAQLMDCQNMLVEIEQKVVALSELSVHNENLLLEGKAHTKDEAEQLAGKLRRLKGSL
LELQRALHDKQLNMQGTAQEKEESDVDLTATQSPGVQEWLAQARTTWTQQRQSSLQQQKELEQELAEQKS
LLRSVASRGEEILIQHSAAETSGDAGEKPDVLSQELGMEGEKSSAEDQMRMKWESLHQEFSTKQKLLQNV
LEQEQEQVLYSRPNRLLSGVPLYKGDVPTQDKSAVTSLLDGLNQAFEEVSSQSGGAKRQSIHLEQKLYDG
VSATSTWLDDVEERLFVATALLPEETETCLFNQEILAKDIKEMSEEMDKNKNLFSQAFPENGDNRDVIED
TLGCLLGRLSLLDSVVNQRCHQMKERLQQILNFQNDLKVLFTSLADNKYIILQKLANVFEQPVAEQIEAI
QQAEDGLKEFDAGIIELKRRGDELQVEQPSMQELSKLQDMYDELMMIIGSRRSGLNQNLTLKSQYERALQ
DLADLLETGQEKMAGDQKIIVSSKEEIQQPLDKHKEYFQGLESHMILTVTLFRKIISFAVQKETQFHTEL
MAQASAVLKRAHKRGVELEYILETWSHLDEDQQELSRQLEVVESSIPSVGLVEENEDRLIDRITLYQHLK
SSLNEYQPKLYQVLDDGKRLLISISCSDLESQLNQLGECWLSNTNKMSKELHRLETILKHWTRYQSESAD
LIHWLQSAKDRLEFWTQQSVTVPQELEMVRDHLNAFLEFSKEVDAQSSLKSSVLSTGNQLLRLKKVDTAT
LRSELSRIDSQWTDLLTNIPAVQEKLHQLQMDKLPSRHAISEVMSWTSLMENAIQKDEDNIKNSIGYKAI
HEYLQKYKGFKIDINCKQLTVDFVNQSVLQISSQDVESKRSDKTDFAEQLGAMNKSWQILQGLVTEKIQL
LEGLLESWSEYENNVQCLKTWFETQEKRLKQQHRIGDQASVQNALKDCQDLEDLIKAKDKEVEKIEQNGL
ALIQTKKEDVSSIVMSTLRELGQTWANLDHMVGQLKILLKSVLDQWSSHKVAFDKINSYLMEARYSLSRF
RLLTGSLEAVQVQVDNLQNLQDDLEKQERSLQKFGSITNQLLKECHPPVTETLTNTLKEVNMRWNNLLEE
IAEQLQSSKALLQLWQRYKDYSKQCASTVQQQEDRTNELLKAATNKDIADDEVATWIQDCNDLLKGLGTV
KDSLFVLHELGEQLKQQVDASAASAIQSDQLSLSQHLCALEQALCKQQTSLQAGVLDYETFAKSLEALEA
WIVEAEEILQGQDPSHSSDLSTIQERMEELKGQMLKFSSMAPDLDRLNELGYRLPLNDKEIKRMQNLNRH
WSLISSQTTERFSKLQSFLLQHQTFLEKCETWMEFLVQTEQKLAVEISGNYQHLLEQQRAHELFQAEMFS
RQQILHSIIIDGQRLLEQGQVDDRDEFNLKLTLLSNQWQGVIRRAQQRRGIIDSQIRQWQRYREMAEKLR
KWLVEVSYLPMSGLGSVPIPLQQARTLFDEVQFKEKVFLRQQGSYILTVEAGKQLLLSADSGAEAALQAE
LAEIQEKWKSASMRLEEQKKKLAFLLKDWEKCEKGIADSLEKLRTFKKKLSQSLPDHHEELHAEQMRCKE
LENAVGSWTDDLTQLSLLKDTLSAYISADDISILNERVELLQRQWEELCHQLSLRRQQIGERLNEWAVFS
EKNKELCEWLTQMESKVSQNGDILIEEMIEKLKKDYQEEIAIAQENKIQLQQMGERLAKASHESKASEIE
YKLGKVNDRWQHLLDLIAARVKKLKETLVAVQQLDKNMSSLRTWLAHIESELAKPIVYDSCNSEEIQRKL
NEQQELQRDIEKHSTGVASVLNLCEVLLHDCDACATDAECDSIQQATRNLDRRWRNICAMSMERRLKIEE
TWRLWQKFLDDYSRFEDWLKSSERTAAFPSSSGVIYTVAKEELKKFEAFQRQVHECLTQLELINKQYRRL

Figure 36 part - 117

ARENRTDSACSLKQMVHEGNQRWDNLQKRVTSILRRLKHFIGQREEFETARDSILVWLTEMDLQLTNIEH
FSECDVQAKIKQLKAFQQEISLNHNKIEQIIAQGEQLIEKSEPLDAAIIEEELDELRRYCQEVFGRVERY
HKKLIRLPLPDDEHDLSDRELELEDSAALSDLHWHDRSADSLLSPQPSSNLSLSLAQPLRSERSGRDTPA
SVDSIPLEWDHDYDLSRDLESAMSRALPSEDEEGQDDKDFYLRGAVALSGDHSALESQIRQLGKALDDSR
FQIQQTENIIRSKTPTGPELDTSYKGYMKLLGECSSSIDSVKRLEHKLKEEEESLPGFVNLHSTETQTAG
VIDRWELLQAQALSKELRMKQNLQKWQQFNSDLNSIWAWLGDTEEELEQLQRLELSTDIQTIELQIKKLK
ELQKAVDHRKAIILSINLCSPEFTQADSKESRDLQDRLSQMNGRWDRVCSLLEEWRGLLQDALMQCQGFH
EMSHGLLLMLENIDRRKNEIVPIDSNLDAEILQDHHKQLMQIKHELLESQLRVASLQDMSCQLLVNAEGT
DCLEAKEKVHVIGNRLKLLLKEVSRHIKELEKLLDVSSSQQDLSSWSSADELDTSGSVSPTSGRSTPNRQ
KTPRGKCSLSQPGPSVSSPHSRSTKGGSDSSLSEPGPGRSGRGFLFRVLRAALPLQLLLLLLLIGLACLVP
MSEEDYSCALSNNFARSFHPMLRYTNGPPPL

Human SYNE1 Protein sequence - var5 (public gi: 17227154) (SEQ ID NO: 299)
MRLEEQKKKLAFLLKDWEKCEKGIADSLEKLRTFKKKLSQSLPDHHEELHAEQMRCKELENAVGSWTDDL
TQLSLLKDTLSAYISADDISILNERVELLQRQWEELCHQLSLRRQQIGERLNEWAVFSEKNKELCEWLTQ
MESKVSQNGDILIEEMIEKLKKDYQEEIAIAQENKIQLQQMGERLAKASHESKASEIEYKLGKVNDRWQH
LLDLIAARVKKLKETLVAVQQLDKNMSSLRTWLAHIESELAKPIVYDSCNSEEIQRKLNEQQELQRDIEK
HSTGVASVLNLCEVLLHDCDACATDAECDSIQQATRNLDRRWRNICAMSMERRLKIEETWRLWQKFLDDY
SRFEDWLKSSERTAAFPSSSGVIYTVAKEELKKFEAFQRQVHECLTQLELINKQYRRLARENRTDSACSL
KQMVHEGNQRWDNLQKRVTSILRRLKHFIGQREEFETARDSILVWLTEMDLQLTNIEHFSECDVQAKIKQ
LKAFQQEISLNHNKIEQIIAQGEQLIEKSEPLDAAIIEEELDELRRYCQEVFGRVERYHKKLIRLPLPDD
EHDLSDRELELEDSAALSDLHWHDRSADSLLSPQPSSNLSLSLAQPLRSERSGRDTPASVDSIPLEWDHD
YDLSRDLESAMSRALPSEDEEGQDDKDFYLRGAVALSGDHSALESQIRQLGKALDDSRFQIQQTENIIRS
KTPTGPELDTSYKGYMKLLGECSSSIDSVKRLEHKLKEEEESLPGFVNLHSTETQTAGVIDRWELLQAQA
LSKELRMKQNLQKWQQFNSDLNSIWAWLGDTEEELEQLQRLELSTDIQTIELQIKKLKELQKAVDHRKAI
ILSINLCSPEFTQADSKESRDLQDRLSQMNGRWDRVCSLLEEWRGLLQDALMQCQGFHEMSHGLLLMLEN
IDRRKNEIVPIDSNLDAEILQDHHKQLMQIKHELLESQLRVASLQDMSCQLLVNAEGTDCLEAKEKVHVI
GNRLKLLLKEVSRHIKELEKLLDVSSSQQDLSSWSSADELDTSGSVSPTSGRSTPNRQKTPRGKCSLSQP
GPSVSSPHSRSTKGGSDSSLSEPGPGRSGRGFLFRVLRAALPLQLLLLLLIGLACLVPMSEEDYSCALSN
NFARSFHPMLRYTNGPPPL

Human SYNE1 Protein sequence - var6 (public gi: 12698057) (SEQ ID NO: 300)
QRKLEQHKDLLQNTDAHKRAFHEIYRTRSVNGIPVPPDQLEDMAERFHFVSSTSELHLMKMEFLELKYRL
LSLLVLAESKLKSWIIKYGRRESVEQLLQNYVSFIENSKFFEQYEVTYQILKQTAEMYVKADGSVEEAEN
VMKFMNETTAQWRNLSVEVRSVRSMLEEVISNWDRYGNTVASLQAWLEDAEKMLNQSENAKKDFFRNLPH
WIQQHTAMNDAGNFLIETCDEMVSRDLKQQLLLLNGRWRELFMEVKQYAQADEMDRMKKEYTDCVVTLSA
FATEAHKKLSEPLEVSFMNVKLLIQDLEDIEQRVPVMDAQYKIITKTAHLITKESPQEEGKEMFATMSKL
KEQLTKVKECYSPLLYESQQLLIPLEELEKQMTSFYDSLGKINEIITVLEREAQSSALFKQKHQELLACQ
ENCKKTLTLIEKGSQSVQKFVTLSNVLKHFDQTRLQRQIADIHVAFQSMVKKTGDWKKHVETNSRLMKKF
EESRAELEKVLRIAQEGLEEKGDPEELLRRHTEFFSQLDQRVLNAFLKACDELTDILPEQEQQGLQEAVR
KLHKQWKDLQGEAPYHLLHLKIDVEKNRFLASVEECRTELDRETKLMPQEGSEKIIKEHRVFFSDKGPHH
LCEKRLQLIEELCVKLPVRDPVRDTPGTCHVTLKELRAAIDSTYRKLMEDPDKWKDYTSRFSEFSSWIST
NETQLKGIKGEAIDTANHGEVKRAVEEIRNGVTKRGETLSWLKSRLKVLTEVSSENEAQKQGDELAKLSS
SFKALVTLLSEVEKMLSNFGDCVQYKEIVKNSLEELISGSKEVQEQAEKILDTENLFEAQQLLLHHQQKT
KRISAKKRDVQQQIAQAQQGEGGLPDRGHEELRKLESTLDGLERSRERQERRIQVTLRKWERFETNKETV
VRYLFQTGSSHERFLSFSSLESLSSELEQTKEFSKRTESIAVQAENLVKEASEIPLGPQNKQLLQQQAKS
IKEQVKKLEDTLEEEYVIDKS

Human SYNE1 Protein sequence - var7 (public gi: 2895593) (SEQ ID NO: 301
MKQNLQKWQQFNSDLNSIWAWLGDTEEELEQLQRLELSTDIQTIELQIKKLKELQKAVDHRKAIILSINL
CSPEFTQADSKESRDLQDRLSQMNGRWDRVCSLLEEWRGLLQDALMQCQGFHEMSHGLLLMLENIDRRKN
EIVPIDSNLDAEILQDHHKQLMQIKHELLESQLRVASLQDMSCQLLVNAEGTDCLEAKEKVHVIGNRLKL
LLKEVSRHIKELEKLLDVSSSQQDLSSWSSADELDTSGSVSPTSGRSTPNRQKTPRGKCSLSQPGPSVSS
PHSRSTKGGSDSSLSEPGPGRSGRGFLFRVLRAALPLQLLLLLLIGLACLVPMSEEDYSCALSNNFARSS
TPCSDTRMALLHSELSRCHLQKCW

Human SYNE1 Protein sequence - var8 (public gi: 6330957) (SEQ ID NO: 302
LDLCRQSNNLCLQREEDLQRTRDYHDCMNVVEVFLEKFTTEWDNLARSDAESTAVHLEALKKLALALQER
KYAIEDLKDQKQKMIEHLNLDDKELVKEQTSHLEQRWFQLEDLIKRKIQVSVTNLEELNVVQSRFQELME
WAEEQQPNIAEALKQSPPPDMAQNLLMDHLAICSELEAKQMLLKSLIKDADRVMADLGLNERQVIQKALS
DAQSHVNCLSDLVGQRRKYLNKALSEKTQFLMAVFQATSQIQQHERKIMFREHICLLPDDVSKQVKTCKS

Figure 36 part - 118

AQASLKTYQNEVTGLWAQGRELMKEVTEQEKSEVLGKLQELQSVYDSVLQKCSHRLQELEKNLVSRKHFK
EDFDKACHWLKQADIVTFPEINLMNESTELHTQLAKYQNILEQSPEYENLLLTLQRTGQTILPSLNEVDH
SYLSEKLNALPRQFNVIVALAKDKFYKVQEAILARKEYASLIELTTQSLSELEAQFLRMSKVPTDLAVEE
ALSLQDGCRAILDEVAGLGEAVDELNQKKEGFRSTGQPWQPDKMLHLVTLYHRLKRQTEQRVSLLEDTTS
AYQEHEKMCQQLERQLKSVKEEQSKVNEETLPAEEKLKMYHSLAGSLQDSGIVLKRVTIHLEDLAPHLDP
LAYEKARHQIQSWQGELKLLTSAIGETVTECESRMVQSIDFQTEMSRSLDWLRRVKAELSGPVYLDLNLQ
DIQEEIRKIQIHQEEVQSSLRIMNALSHKEKEKFTKAKELISADLEHSLAELSELDGDIQEALRTRQATL
TEIYSQCQRYYQVFQAANDWLEDAQEMLQLAGNGLDVESAEENLKSHMEFFSTEDQFHSNLEELHSLVAT
LDPLIKPTGKEDLEQKVASLELRSQRMSRDSGAQVDLLQRCTAQWHDYQKAREEVIELMNDTEKKLSEFS
LLKTSSSHEAEEKLSEHKALVSVVNSFHEKIVALEEKASQLEKTGNDASKATLSRSMTTVWQRWTRLRAV
AQDQEKILEDAVDEWTGFNNKVKKATEMIDQLQDKLPGSSAEKASKAELLTLLEYHDTFVLELEQQQSAL
GMLRQQTLSMLQDGAAPTPGEEPPLMQEITAMQDRCLNMQEKVKTNGKLVKQELKDREMVETQINSVKCW
VQETKEYLGNPTIEIDAQLEELQILLTEATNHRQNIEKMAEEQKEKYLGLYTILPSELSLQLAEVALDLK
IRDQIQDKIKEVEQSKATSQELSRQIQKLAKDLTTILTKLKAKTDNVVQAKTDQKVLGEELDGCNSKLME
LDAAVQKFLEQNGQLGKPLAKKIGKLTELHQQTIRQAENRLSKLNQAASHLEEYNEMLELILKWIEKAKV
LAHGTIAWNSASQLREQYILHQVTLGKIIFKK

Human SYNE1 Protein sequence - var9 (public gi: 20521662) (SEQ ID NO: 303

WISLMENVIQKDEDNIKNSIGYKAIHEYLQKYKGFKIDINCKQLTVDFVNQSVLQISSQDVESKRSDKTD
FAEQLGAMNKSWQILQGLVTEKIQLLEGLLESWSEYENNVQCLKTWFETQEKRLKQQHRIGDQASVQNAL
KDCQDLEDLIKAKEKEVEKIEQNGLALIQNKKEDVSSIVMSTLRELGQTWANLDHMVGQLKILLKSVLDQ
WSSHKVAFDKINSYLMEARYSLSRFRLLTGSLEAVQVQVDNLQNLQDDLEKQERSLQKFGSITNQLLKEC
HPPVTETLTNTLKEVNMRWNNLLEEIAEQLQSSKALLQLWQRYKDYSKQCASTVQQQEDRTNELLKAATN
KDIADDEVATWIQDCNDLLKGLGTVKDSLFVLHELGEQLKQQVDASAASAIQSDQLSLSQHLCALEQALC
KQQTSLQAGVLDYETFAKSLEALEAWIVEAEEILQGQDPSHSSDLSTIQERMEELKGQMLKFSSMAPDLD
RLNELGYRLPLNDKEIKRMQNLNRHWSLISSQTTERFSKLQSFLLQHQTFLEKCETWMEFLVQTEQKLAV
EISGNYQHLLEQQRAHELFQAEMFSRQQILHSIIIDGQRLLEQGQVDDRDEFNLKLTLLSNQWQGVIRRA
QQRRGIIDSQIRQWQRYREMAEKLRKWLVEVSYLPMSGLGSVPIPLQQARTLFDEVQFKEKVFLRQQGSY
ILTVEAGKQLLLSADSGAEAALQAELAEIQEKWKSASMRLEEQKKKLAFLLKDWEKCEKGIADSLEKLRT
FKKKLSQSLPDHHEELHAEQMRCKELENAVGSWTDDLTQLSLLKDTLSAYISADDISILNERVELLQRQW
EELCHQLSLRRQQIGERLNEWAVFSEKNKELCEWLTQMESKVSQNGDILIEEMIEKLKKDYQEEIAIAQE
NKIQLQQMGERLAKASHESKASEIEYKLGKVNDRWQHLLDLIAARVKKLKETLVAVQQLDKNMSSLRTWL
AHIESELAKPIVYDSCNSEEIQRKLNEQQELQRDIEKHSTGVASVLNLCEVLLHDCDACATDAECDSIQQ
ATRNLDRRWRNICAMSMERRLKIEETWRLWQKFLDDYSRFEDWLKSSERTAAFPSSSGVIYTVAKEELKK
FEAFQRQVHECLTQLELINKQYRRLARENRTDSACSLKQMVHEGNQRWDNLQKRVTSILRRLKHFIGQRE
EFETARDSILVWLTEMDLQLTNIEHFSECDVQAKIKQLKAFQQEISLNHNKIEQIIAQGEQLIEKSEPLD
AAIIEEELDELRRYCQEVFGRVERYHKKLIRLPLPDDEHDLSDRELELEDSAALSDLHWHDRSADSLLSP
QPSSNLSLSLAQPLRSERSGRDTPASVDSIPLEWDHDYDLSRDLESAMSRALPSEDEEGQDDKDFYLRGA
VALSGDHSALESQIRQLGKALDDSRFQIQQTENIIRSKTPTGPELDTSYKGYMKLLGECSSSIDSVKRLE
HKLKEEEESLPGFVNLHSTETQTAGVIDRWELLQAQALSKELRMKQNLQKWQQFNSDLNSIWAWLGDTEE
ELEQLQRLELSTDIQTIELQIKKLKELQKAVDHRKAIILSINLCSPEFTQADSKESRDLQDRLSQMNGRW
DRVCSLLEEWRGLLQDALMQCQGFHEMSHGLLLMLENIDRRKNEIVPIDSNLDAEILQDHHKQLMQIKHE
LLESQLRVASLQDMSCQLLVNAEGTDCLEAKEKVHVIGNRLKLLLKEVSRHIKELEKLLDVSSSQQDLSS
WSSADELDTSGSVSPTSGRSTPNRQKTPRGKCSLSQPGPSVSSPHSRSTKGGSDSSLSEPGPGRSGRGFL
FRVLRAALPLQLLLLLLIGLACLVPMSEEDYSCALSNNFARSFHPMLRYTNGPPPL

Human SYNE1 Protein sequence - var10 (public gi: 28195689) (SEQ ID NO: 304

MTEKLQYLTSVYCTEKMSQQVAELGRETEELRQMIKIRLQNLQDAAKDMKKFEAELKKLQAALEQAQATL
TSPEVGRLSLKEQLSHRQHLLSEMESLKPKVQAVQLCQSALRIPEDVVASLPLCHAALRLQEEASRLQHT
AIQQCNIMQEAVVQYEQYEQEMKHLQQLIEGAHREIEDKPVATSNIQELQAQISRHEELAQKIKGYQEQI
ASLNSKCKMLTMKAKHATMLLTVTEVEGLAEGTEDLDGELLPTPSAHPSVVMMTAGRCHTLLSPVTEESG
EEGTNSEISSPPACRSPSPVANTDASVNQDIAYYQALSAERLQTDAAKIHPSTSASQEFYEPGLEPSATA
KLGDLQRSWETLKNVISEKQRTLYEALERQQKYQDSLQSISTKMEAIELKLSESPEPGRSPESQMAEHQA
LMDEILMLQDEINELQSSLAEELVSESCEADPAEQLALQSTLTVLAERMSTIRMKASGKRQLLEEKLNDQ
LEEQRQEQALQRYRCEADELDSWLLSTKATLDTALSPPKEPMDMEAQLMDCQNMLVEIEQKVVALSELSV
HNENLLLEGKAHTKDEAEQLAGKLRRLKGSLLELQRALHDKQLNMQGTAQEKEESDVDLTATQSPGVQEW
LAQARTTWTQQRQSSLQQQKELEQELAEQKSLLRSVASRGEEILIQHSAAETSGDAGEKPDVLSQELGME
GEKSSAEDQMRMKWESLHQEFSTKQKLLQNVLEQEQEQVLYSRPNRLLSGVPLYKGDVPTQDKSAVTSLL
DGLNQAFEEVSSQSGGAKRQSIHLEQKLYDGVSATSTWLDDVEERLFVATALLPEETETCLFNQEILAKD
IKEMSEEMDKNKNLFSQAFPENGDNRDVIEDTLGCLLGRLSLLDSVVNQRCHQMKERLQQILNFQNDLKV
LFTSLADNKYIILQKLANVFEQPVAEQIEAIQQAEDGLKEFDAGIIELKRRGDELQVEQPSMQELSKLQD
MYDELMMIIGSRRSGLNQNLTLKSQYERALQDLADLLETGQEKMAGDQKIIVSSKEEIQQPLDKHKEYFQ

Figure 36 part - 119

GLESHMILTVTLFRKIISFAVQKETQFHTELMAQASAVLKRAHKRGVELEYILETWSHLDEDQQELSRQL
EVVESSIPSVGLVEENEDRLIDRITLYQHLKSSLNEYQPKLYQVLDDGKRLLISISCSDLESQLNQLGEC
WLSNTNKMSKELHRLETILKHWTRYQSESADLIHWLQSAKDRLEFWTQQSVTVPQELEMVRDHLNAFLEF
SKEVDAQSSLKSSVLSTGNQLLRLKKVDTATLRSELSRIDSQWTDLLTNIPAVQEKLHQLQMDKLPSRHA
ISEVMSWTSLMENAIQKDEDNIKNSIGYKAIHEYLQKYKGFKIDINCKQLTVDFVNQSVLQISSQDVESK
RSDKTDFAEQLGAMNKSWQILQGLVTEKIQLLEGLLESWSEYENNVQCLKTWFETQEKRLKQQHRIGDQA
SVQNALKDCQDLEDLIKAKDKEVEKIEQNGLALIQTKKEDVSSIVMSTLRELGQTWANLDHMVGQLKILL
KSVLDQWSSHKVAFDKINSYLMEARYSLSRFRLLTGSLEAVQVQVDNLQNLQDDLEKQERSLQKFGSITN
QLLKECHPPVTETLTNTLKEVNMRWNNLLEEIAEQLQSSKALLQLWQRYKDYSKQCASTVQQQEDRTNEL
LKAATNKDIADDEVATWIQDCNDLLKGLGTVKDSLFVLHELGEQLKQQVDASAASAIQSDQLSLSQHLCA
LEQALCKQQTSLQAGVLDYETFAKSLEALEAWIVEAEEILQGQDPSHSSDLSTIQERMEELKGQMLKFSS
MAPDLDRLNELGYRLPLNDKEIKRMQNLNRHWSLISSQTTERFSKLQSFLLQHQTFLEKCETWMEFLVQT
EQKLAVEISGNYQHLLEQQRAHELFQAEMFSRQQILHSIIIDGQRLLEQGQVDDRDEFNLKLTLLSNQWQ
GVIRRAQQRRGIIDSQIRQWQRYREMAEKLRKWLVEVSYLPMSGLGSVPIPLQQARTLFDEVQFKEKVFL
RQQGSYILTVEAGKQLLLSADSGAEAALQAELAEIQEKWKSASMRLEEQKKKLAFLLKDWEKCEKGIADS
LEKLRTFKKKLSQSLPDHHEELHAEQMRCKELENAVGSWTDDLTQLSLLKDTLSAYISADDISILNERVE
LLQRQWEELCHQLSLRRQQIGERLNEWAVFSEKNKELCEWLTQMESKVSQNGDILIEEMIEKLKKDYQEE
IAIAQENKIQLQQMGERLAKASHESKASEIEYKLGKVNDRWQHLLDLIAARVKKLKETLVAVQQLDKNMS
SLRTWLAHIESELAKPIVYDSCNSEEIQRKLNEQQELQRDIEKHSTGVASVLNLCEVLLHDCDACATDAE
CDSIQQATRNLDRRWRNICAMSMERRLKIEETWRLWQKFLDDYSRFEDWLKSSERTAAFPSSSGVIYTVA
KEELKKFEAFQRQVHECLTQLELINKQYRRLARENRTDSACSLKQMVHEGNQRWDNLQKRVTSILRRLKH
FIGQREEFETARDSILVWLTEMDLQLTNIEHFSECDVQAKIKQLKAFQQEISLNHNKIEQIIAQGEQLIE
KSEPLDAAIIEEELDELRRYCQEVFGRVERYHKKLIRLPLPDDEHDLSDRELELEDSAALSDLHWHDRSA
DSLLSPQPSSNLSLSLAQPLRSERSGRDTPASVDSIPLEWDHDYDLSRDLESAMSRALPSEDEEGQDDKD
FYLRGAVALSGDHSALESQIRQLGKALDDSRFQIQQTENIIRSKTPTGPELDTSYKGYMKLLGECSSSID
SVKRLEHKLKEEEESLPGFVNLHSTETQTAGVIDRWELLQAQALSKELRMKQNLQKWQQFNSDLNSIWAW
LGDTEEELEQLQRLELSTDIQTIELQIKKLKELQKAVDHRKAIILSINLCSPEFTQADSKESRDLQDRLS
QMNGRWDRVCSLLEEWRGLLQDALMQCQGFHEMSHGLLLMLENIDRRKNEIVPIDSNLDAEILQDHHKQL
MQIKHELLESQLRVASLQDMSCQLLVNAEGTDCLEAKEKVHVIGNRLKLLLKEVSRHIKELEKLLDVSSS
QQDLSSWSSADELDTSGSVSPTSGRSTPNRQKTPRGKCSLSQPGPSVSSPHSRSTKGGSDSSLSEPGPGR
SGRGFLFRVLRAALPLQLLLLLLIGLACLVPMSEEDYSCALSNNFARSFHPMLRYTNGPPPL

Human SYNE1 Protein sequence - var11 (public gi: 28195677) (SEQ ID NO: 305)
MVVAEDLSALRMAEDGCVDADLPDCNCDVTRARVKKLKETLVAVQQLDKNMSSLRTWLAHIESELAKPIV
YDSCNSEEIQRKLNEQQELQRDIEKHSTGVASVLNLCEVLLHDCDACATDAECDSIQQATRNLDRRWRNI
CAMSMERRLKIEETWRLWQKFLDDYSRFEDWLKSSERTAAFPSSSGVIYTVAKEELKKFEAFQRQVHECL
TQLELINKQYRRLARENRTDSACSLKQMVHEGNQRWDNLQKRVTSILRRLKHFIGQREEFETARDSILVW
LTEMDLQLTNIEHFSECDVQAKIKQLKAFQQEISLNHNKIEQIIAQGEQLIEKSEPLDAAIIEEELDELR
RYCQEVFGRVERYHKKLIRLPLPDDEHDLSDRELELEDSAALSDLHWHDRSADSLLSPQPSSNLSLSLAQ
PLRSERSGRDTPASVDSIPLEWDHDYDLSRDLESAMSRALPSEDEEGQDDKDFYLRGAVALSDVMIPESP
EAYVKLTENAIKNTSGDHSALESQIRQLGKALDDSRFQIQQTENIIRSKTPTGPELDTSYKGYMKLLGEC
SSSIDSVKRLEHKLKEEEESLPGFVNLHSTETQTAGVIDRWELLQAQALSKELRMKQNLQKWQQFNSDLN
SIWAWLGDTEEELEQLQRLELSTDIQTIELQIKKLKELQKAVDHRKAIILSINLCSPEFTQADSKESRDL
QDRLSQMNGRWDRVCSLLEEWRGLLQDALMQCQGFHEMSHGLLLMLENIDRRKNEIVPIDSNLDAEILQD
HHKQLMQIKHELLESQLRVASLQDMSCQLLVNAEGTDCLEAKEKVHVIGNRLKLLLKEVSRHIKELEKLL
DVSSSQQDLSSWSSADELDTSGSVSPTSGRSTPNRQKTPRGKCSLSQPGPSVSSPHSRSTKGGSDSSLSE
PGPGRSGRGFLFRVLRAALPLQLLLLLLIGLACLVPMSEEDYSCALSNNFARSFHPMLRYTNGPPPL

Human SYNE1 Protein sequence - var12 (public gi: 28192628) (SEQ ID NO: 306)
MATSRGASRCPRDIANVMQRLQDEQEIVQKRTFTKWINSHLAKRKPPMVVDDLFEDMKDGVKLLALLEVL
SGQKLPCEQGRRMKRIHAVANIGTALKFLEGRKIKLVNINSTDIADGRPSIVLGLMWTIILYFQIEELTS
NLPQLQSLSSSASSVDSIVSSETPSPPSKRKVTTKIQGNAKKALLKWVQYTAGKQTGIEVKDFGKSWRSG
VAFHSVIHAIRPELVDLETVKGRSNRENLEDAFTIAETELGIPRLLDPEDVDVDKPDEKSIMTYVAQFLK
HYPDIHNASTDGQEDDEILPGFPSFANSVQNFKREDRVIFKEMKVWIEQFERDLTRAQMVESNLQDKYQS
FKHFRVQYEMKRKQIEHLIQPLHRDGKLSLDQALVKQSWDRVTSRLFDWHIQLDKSLPAPLGTIGAWLYR
AEVALREEITVQQVHEETANTIQRKLEQHK

Human SYNE1 Protein sequence - var13 (public gi: 28192522) (SEQ ID NO: 307)
HIQLDKSLPAPLGTIGAWLYRAEVALREEITVQQVHEETANTIQRKLEQHKRKCRTMMDLLQNTDAHKRA
FHEIYRTRSVNGIPVPPDQLEDMAERFHFVSPTSELHLMKMEFLELKYRLLSLLVLAESKLKSWIIKYGR
RESVEQLLQNYVSFIENSKFFEQYEVTYQILKQTAEMYVKADGSVEEAENVMKFMNETTAQWRNLSVEVR
SVRSMLEEVISNWDRYGNTVASLQAWLEDAEKMLNQSENAKKDFFRNLPHWIQQHTAMNDAGNFLIETCD

Figure 36 part - 120

EMVSRDLKQQLLLLNGRWRELFMEVKQYAQADEMDRMKKEYTDCVVTLSAFATEAHKKLSEPLEVSFMNV
KLLIQDLEDIEQRVPVMDAQYKIITKTAHLITKESPQEEGKEMFATMSKLKEQLTKVKECYSPLLYESQQ
LLIPLEELEKQMTSFYDSLGKINEIITVLEREAQSSALFKQKHQ

Figure 36 part - 121

Unigene Name: TTC3 Unigene ID: Hs.118174 Clone ID: GD_1105

Human TTC3 mRNA sequence - var1 (public gi: 2687860) (SEQ ID NO: 202)

ATTAAAATAAACATCTTCTGGCCACTTCTGTTTCAACATCAAAACAGTTCCGTAATATCACGATTGCATC
CCTGTGTGGACGCCAACAATTCACGTGCTTCTGAGATAAATTTGAAGAAACTACAACATCTTGAGTTGAT
GGAAGATATTGTGGATTTGGCAAAGAAAGTTGCTAATGATTCATTCCTTATTGGAGGCTTATTGAGAATT
GGTTGTAAAATAGAAAATAAAATCTTGGCAATGGAAGAAGCTCTGAATTGGATAAAATATGCAGGCGATG
TAACAATTCTAACTAAATTAGGATCAATTGACAATTGTTGGCCTATGTTAAGTATTTTCTTTACTGAATA
CAAGTACCACATAACTAAAATTGTAATGGAAGACTGCAATTTGCTTGAAGAACTTAAAACTCAAAGTTGT
ATGGATTGTATAGAGGAAGGAGAACTAATGAAAATGAAAGGAAATGAAGAGTTTTCCAAAGAAAGATTTG
ATATAGCTATTATCTATTACACCAGAGCCATTGAATATAGACCTGAAAACTACCTTCTTTATGGTAACCG
AGCTCTTTGTTTTCTTCGTACTGGACAGTTTAGAAATGCACTCGGTGATGGAAAGAGAGCCACTATTCTG
AAGAACACTTGGCCAAAGGGTCATTATCGTTATTGTGATGCTCTTTCTATGCTGGGGGAATATGACTGGG
CCCTGCAAGCAAACATAAAAGCTCAAAAACTCTGTAAAAATGACCCTGAGGGAATCAAGGATCTAATTCA
GCAGCATGTAAAGTTACAAAAACAAATAGAAGACCTACAAGGTCGAACAGCAAATAAGGATCCAATTAAA
GCCTTTTATGAAAACAGGGCCTACACACCTAGGAGTTTATCAGCACCTATATTTACTACTTCACTTAACT
TTGTGGAGAAGGAAAGAGATTTCAGAAAAATTAATCACGAAATGGCCAACGGTGGTAATCAGAATCTAAA
GGTGGCGGATGAGGCGTTGAAGGTAGATGATTGTGACTGTCATCCTGAATTTTCACCACCATCAAGTCAG
CCTCCAAAACATAAAGGAAAACAAAAATCTCGAAACAATGAATCAGAAAAGTTCAGTTCTAGTTCACCAT
TGACTTTACCAGCAGATTTGAAGAACATCTTGGAGAAACAGTTTTCTAAATCTTCAAGAGCTGCACACCA
GGATTTTGCTAATATAATGAAAATGCTGAGAAGCTTAATTCCAGATGGCTATATGGCCTTATTGGAGCAG
CGTTGCCGCAGCGCTGCACAGGCCTTTACAGAGTTGCTGAACGGTTTAGATCCTCAAAAAATAAAGCAAT
TGAACCTGGCCATGATTAACTATGTTTTGGTCGTCTATGGACTTGCCATTTCTCTCCTTGGAATAGGACA
GCCTGAGGAATTATCTGAAGCCGAAAACCAGTTTAAGAGGATTATTGAACACTACCCCAGTGAGGGCCTT
GATTGCTTGGCCTACTGTGGAATTGGAAAAGTATATTTGAAAAAAAACAGATTTCTAGAAGCTCTCAATC
ACTTTGAGAAAGCAAGAACCTTGATTTATCGTCTTCCTGGAGTGTTAACTTGGCCCACGAGTAATGTGAT
TATTGAAGAGTCTCAGCCACAAAAAATAAAGATGCTGTTAGAGAAATTTGTTGAAGAATGCAAGTTCCCT
CCAGTGCCAGATGCCATTTGTTGCTATCAGAAGTGCCATGGATATTCTAAGATCCAGATATACATAACTG
ATCCAGACTTTAAGGGTTTTATACGCATCAGCTGTTGCCAGTACTGTAAAATAGAATTTCACATGAATTG
CTGGAAGAAGTTAAAAACTACAACCTTTAATGATAAAATTGACAAGGATTTTCTACAAGGAATATGTCTT
ACCCCTGACTGTGAAGGTGTCATTTCTAAGATTATCATCTTCAGCAGTGGTGGTGAAGTTAAATGTGAAT
TTGAACACAAGGTCATAAAAGAAAAGGTTCCTCCAAGACCTATTCTGAAACAGAAATGTTCTAGCCTAGA
GAAACTAAGACTGAAAGAAGACAAAAAATTGAAGAGAAAGATCCAAAAAAAAGAAGCAAAAAAGTTAGCA
CAAGAAAGAATGGAGGAGGACTTAAGAGAAAGTAATCCACCCAAAAATGAAGAGCAGAAAGAAACTGTAG
ACAATGTTCAGCGTTGTCAGTTCCTTGATGACAGAATTCTACAGTGTATAAAGCAGTATGCTGACAAGAT
TAAATCCGGCATACAGAATACAGCCACGCTTCTCAAAGAATTGCTTTCTTGGAAAGTTTTGAGCACAGAA
GACTATACAACCTGTTTTTCTAGCAGAAATTTTCTAAATGAAGCAGTGGACTATGTTATTCGCCACTTGA
TTCAAGAAAATAACAGAGTAAAGACAAGAATATTTCTGCATGTTTTGAGTGAGCTTAAAGAAGTGGAGCC
CAAATTAGCCGCCTGGATCCAAAAACTTAATAGCTTTGGCTTAGATGCCACAGGAACTTTCTTTTCTCGT
TATGGAGCATCTCTTAAACTGCTTGATTTTAGTATCATGACTTTCCTCTGGAATGAGAAATATGGTCACA
AACTAGACTCTATAGAAGGAAAGCAACTTGATTATTTCTCTGAGCCAGCATCATTGAAGGAAGCCCGTTG
TTTAATATGGCTGCTAGAAGAACACAGAGACAAGTTCCCAGCATTGCATAGTGCTTTAGATGAATTCTTT
GATATAATGGACAGCCGCTGTACTGTGTTAAGGAAACAAGATAGTGGTGAAGCACCGTTTAGTTCAACCA
AGGTGAAAAACAAAAGCAAGAAAAAGAAGCCAAAGGATTCAAAGCCTATGTTAGTTGGGTCTGGAACAAC
TTCAGTAACTTCAAATAATGAGATCATCACTTCAAGTGAAGACCATAGCAATCGAAATTCAGATTCTGCA
GGCCCATTTGCAGTGCCTGACCATCTTCGGCAAGATGTAGAAGAATTCGAAGCTCTCTATGACCAACACA
GTAACGAATATGTTGTCCGCAATAAGAAGCTATGGGACATGAACCCAAAACAAAAATGTTCAACTCTATA
TGATTACTTCTCTCAGTTTTTGGAGGAACATGGTCCCTTGGACATGAGTAACAAGATGTTCTCTGCAGAA
TATGAGTTTTTCCCAGAAGAAACTCGACAGATACTAGAAAAAGCAGGAGGTTTAAAACCTTTTCTCTTGG
GATGCCCTCGTTTTGTTGTGATTGACAACTGTATTGCACTGAAGAAGGTTGCATCACGGCTCAAGAAAAA
AAGGAAGAAGAAAAACATTAAAACAAAAGTAGAAGAAATTTCAAAAGCAGGGGAGTATGTACGAGTTAAA
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CAGCACCAGCTTTTGAAAATGTGAAACCCAAACCTGTGTCTGCAAATTCTCCCAAGCCAGCTTGTGAAGA
TGTGAAGGCCAAACCAGTATCCGACAATTCTTCTAGACAAGTTTCTGAGGATGGGCAACCCAAAGGGGTC
TCTTCTAATTCTCCTAAACCAGGCTCTGAGGATGCAAATTACAAGCGAGTCTCCTGTAATTCCCCCAAAC

Figure 36 part - 122

CGGTTCTTGAGGATGTGAAACCAACTTATTGGGCTCAATCCCATTTGGTCACAGGATACTGTACGTATCT
TCCTTTCCAGAGATTTGATATCACCCAGACACCGCCAGCATACATAAACGTGTTACCAGGTTTGCCCCAG
TACACCAGCATATATACACCCTTGGCCAGCCTTTCTCCTGAATATCAGCTACCAAGATCAGTACCAGTGG
TGCCGTCTTTTGTAGCCAATGACAGAGCAGATAAAAATGCTGCTGCCTATTTTGAGGGTCATCATTTGAA
TGCTGAGAATGTTGCTGGTCACCAGATTGCCTCTGAAACACAGATCCTTGAGGGCTCTTTGGGAATATCT
GTAAAGTCACACTGCAGCACAGGTGATGCTCATACAGTCCTGAGTGAGTCTAACAGAAATGATGAGCACT
GTGGAAATTCTAACAACAAATGTGAAGTAATTCCAGAAAGCACCAGTGCAGTAACAAACATTCCACACGT
GCAGATGGTTGCCATACAGGTATCTTGGAACATAATACACCAAGAAGTCAATACTGAGCCATATAATCCT
TTTGAGGAACGACAAGGGGAAATTTCACGGATTGAAAAGGAGCACCAAGTATTACAAGACCAACTTCAAG
AAGTGTATGAAAATTATGAGCAGATAAAACTTAAGGGCTTAGAAGAGACCAGGGACCTGGAAGAGAAGTT
GAAAAGGCACTTAGAAGAAAACAAGATCTCAAAGACGGAATTAGATTGGTTCCTTCAAGATTTGGAAAGA
GAAATTAAAAAATGGCAACAGGAAAAAAAAGAAATCCAAGAAAGACTAAAATCACTGAAGAAGAAAATTA
AAAAGGTTTCAAATGCCAGTGAAATGTATACCCAGAAAAATGATGGAAAGGAAAAGGAACATGAATTACA
TCTGGATCAGTCCCTTGAAATCAGCAACACACTTACAAATGAGAAAATGAAAATAGAAGAGTATATAAAG
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TCCCGAGTTACTCCCTGAGTCTTCAGGCGACGATGGCCAAGGGCTTGTGACTTCTGCAAGCGACGTGACT
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CTGCGCTGTTGCCAGGGCCACCCCCTGGTCAGCCTGAAGCCACTCAGCTGACAGGGCCAAAACGGGCTGG
CCAGGCAGCTCTGTCAGAACGAAGCCCTGTGACTGATCGGAAGCAGCCTGTTCCTCCAGGACGTGCTGCG
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CCAGGAAAGGACAAGAGGACTTATGAGCCCAGCTCTGCCACCCCCGTGACCAGGTCCTCCCAGGGCTCAC
CCTCGGTGGTTGTTGCACCATCACCCAAAACCAAGGGGCAGAAAGCAGAAGATGTCCCTGTGAGGATTGC
ACTGGGTGCAAGTTCCTGTGAAATATGCCACGAGGTGTTCAAATCAAAAAACGTGCGTGTGCTCAAATGT
GGGCACAAGTATCACAAAGGGTGCTTTAAGCAGTGGCTTAAAGGGCAGAGCGCTTGCCCGGCCTGCCAGG
GTCGTGATCTCCTGACAGAAGAGTCACCTTCTGGAAGAGGCTGGCCCAGTCAGAATCAGGAGCTGCCTTC
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TGTGAGTCAGTCAGCGAGTGCTTGGGATCCGCATCCAGCCGTGCTGAGCACACAACAGGCTGTGTGTGGA
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GTAAATATAGAACCATGAATTCTGGTCACATTCCATTTCTCTCCAACATGAAGGATCAAAAAATGTTTTT
CAATGTGTTCTTTGTTCCACTGGAAACTTAGAGTCATGAGTTTATGAGCTGATTTGGTCACCTTCCTCTG
CCTTTGTTCACTGTGAGTTCTGATGTCTTAGTGACTTAGTTCTTAGAAGCTCACGCCTTAGTTTGAAACA
GATTCTCCACGGTGGTCCCCAAAACACTGTCTGCATATCCATAAGAATTGAGCGCTATGGGTGTTAACGT
GCATGAGGATCAGTTTGCAGCAGCAAGTACAAAAGGAGAAGAGGAACATCCGTTGAATGAGTGTGTTTTG
TACATAACTTCAGATACTTGTGAACATGCCTTATATTTGTCCAACAACTGTCAGAATAAAGAACATTCT

Human TTC3 mRNA sequence - var2 (public gi: 1632765) (SEQ ID NO: 203)
TACATTTGGAAAGTCTTACTGACATGCAGAAATAGTACAGAAAAACATACAAATAGGAATGTTATTGGCT
GGGCATGGTGGCTCACACCTGTAATCCCAGCACTTTGGGAGGCCAAGGCGGGTGGATCACAAGGTCAGGA
GATCGAGACCATCGTGGCTAACATGGTGAAACCCTGTGCCTACTAAAAATTCAAAAAATTAGCCAGGTGT
ACTGGCATGTGCTGTAATCCCAGCTACTTGGGAGGCTGAGGCAGGAGAATCACTTGAACCCGGGAGCAAA
GGTTGCAGTGAGCCAAGATCACGCCACTGCACTCCAGCCTGGGCGACAGAGCGAGACTCTGTCTCAAAAA
AAACAAAAGAATGCTATGCATAGGTACAATGTCGAAATGTGCAAGAAATACTTCAGAAATATTAAAAGTA
GTTATTCCTGGGTAGTTGTGATTGTGACTCTGGGTGACTTTTTCCCTTTGTTTTATTTTTCTGTATTTTC
CAAATTTCCTATAATGGACATATATTATATGGATTTTTTTTAATTAAAATTATCTTTTGACTAGATAATA

Figure 36 part - 123

TACATGGAAAATTCACAAAGTACACATATGCAAGATATAATACTTTTACTATAAAAGAGTGAAAATTTTT
AAATACTTGTTTTTCCTTTTAGAAATGCACTCGGTGATGGAAAGAGAGCCACTATTCTGAAGAACACTTG
GCCAAAGGGTCATTATCGTTATTGTGATGCTCTTTCTATGCTGGGGGAATATGACTGGGCCCTGCAAGCA
AACATAAAAGCTCAAAAACTCTGTAAAAATGACCCTGAGGGAATCAAGGATCTAATTCAGCAGCATGTAA
AGTTACAAAAACAAATAGAAGACCTACAAGGTCGAACAGCAAATAAGGATCCAATTAAAGCCTTTTATGA
AAACAGGGCCTACACACCTAGGAGTTTATCAGCACCTATATTTACTACTTCACTTAACTTTGTGGAGAAG
GAAAGAGATTTCAGAAAAATTAATCACGAAATGGCCAACGGTGGTAATCAGAATCTAAAGGTGGCGGATG
AGGCGTTGAAGGTAGATGATTGTGACTGTCATCCTGAATTTTCACCACCATCAAGTCAGCCTCCAAAACA
TAAAGGAAAACAAAAATCTCGAAACAATGAATCAGAAAAGTTCAGTTCTAGTTCACCATTGACTTTACCA
GCAGATTTGAAGAACATCTTGGAGAAACAGTTTTCTAAATCTTCCAGAGCTGCACACCAGGATTTTGCTA
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CGCTGCACAGGCCTTTACAGAGTTGCTGAACGGTTTAGATCCTCAAAAAATAAAGCAATTGAACCTGGCC
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TATCTGAAGCCGAAAACCAGTTTAAGAGGATTATTGAACACTACCCCAGTGAGGGCCTTGATTGCTTGGC
CTACTGTGGAATTGGAAAAGTGTATTTGAAAAAAAACAGATTTCTAGAAGCTCTCAATCACTTTGAGAAA
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CGTTGTCAGTTCCTTGATGACAGAATTCTACAGTGTATAAAGCAGTATGCTGACAAGATTAAATCCGGCA
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CAGCCGCTGTACTGTGTTAAGGAAACAAGATAGTGGTGAAGCACCGTTTAGTTCAACCAAGGTGAAAAAC
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CAAATAATGAGATCATCACTTCAAGTGAAGACCATAGCAATCGAAATTCAGATTCTGCAGGCCCATTTGC
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GTTGTCCGCAATAAGAAGCTATGGGACATGAACCCAAAACAAAAATGTTCAACTCTATATGATTACTTCT
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TTTGAAAATGTGAAACCCAAACCTGTGTCTGCAAATTCTCCCAAGCCAGCTTGTGAAGATGTGAAGGCCA
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GATTTGATATCACCCAGACACCGCCAGCATACATAAACGTGTTACCAGGTTTGCCCCAGTACACCAGCAT
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CTGCAGCACAGGTGATGCTCATACAGTCCTGAGTGAGTCTAACAGAAATGATGAGCACTGTGGAAATTCT
AACAACAAATGTGAAGTAATTCCAGAAAGCACCAGTGCAGTAACAAACATTCCACACGTGCAGATGGTTG
CCATACAGGTATCTTGGAACATAATACACCAAGAAGTCAATACTGAGCCATATAATCCTTTTGAGGAACG
ACAAGGGGAAATTTCACGGATTGAAAAGGAGCACCAAGTATTACAAGACCAACTTCAAGAAGTGTATGAA
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TAGAAGAAAACAAGATCTCAAAGACGGAATTAGATTGGTTCCTTCAAGATTTGGAAAGAGAAATTAAAAA
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AATGCCAGTGAAATGTATACCCAGAAAAATGATGGAAAGGAAAAGGAACATGAATTACATCTGGATCAGT
CCCTTGAAATCAGCAACACACTTACAAATGAGAAAATGAAAATAGAAGAGTATATAAAGAAAGGGAAAGA
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GAAGTGTATAAGCTACAGATCATGGAGTCACAAGCAGAAGCCTTTCTGAAGAAGCTGGGGCTGATTAGCC
GTGATCCTGCAGCATATCCTGACATGGAGTCTGATATACGTTCATGGGAATTGTTTCTTTCTAATGTTAC
AAAAGAAATTGAGAAAGCAAAGTCTCAGTTTGAAGAACAAATTAAGGCAATTAAAAATGGTTCTCGGCTC

Figure 36 part - 124

AGTGAACTTTCTAAAGTGCAGATTTCTGAGCTTTCATTTCCTGCCTGTAACACGGTTCATCCCGAGTTAC
TCCCTGAGTCTTCAGGCCACGATGGCCAAGGGCTTGTGACTTCTGCAAGCGACGTGACTGGAAACCACGC
AGCACTTCACAGGGATCCTAGTGTGTTCTCTGCTGGTGATTCCCCAGGGGAGGCTCCTTCTGCGCTGTTG
CCAGGGCCACCCCCTGGTCAGCCTGAAGCCACTCAGCTGACAGGGCCAAAACGGGCTGGCCAGGCAGCTC
TGTCAGAACGAAGCCCTGTGGCTGATCGGAAGCAGCCTGTTCCTCCAGGACGTGCTGCGCGTTCAAGCCA
GTCTCCAAAAAAGCCGTTCAATAGTATTATTGAGCACCTGTCAGTGGTATTCCCATGTTACAACAGCACT
GAGCTTGCTGGTTTTATTAAAAAAGTGCGAAGCAAAAACAAGAACTCACTCTCAGGATTGAGTATTGATG
AAATTGTCCAAAGAGTGACAGAACACATTCTAGATGAACAGAAAAAGAAAAAGCCAAACCCAGGAAAGGA
CAAGAGGACTTATGAGCCCAGCTCTGCCACCCCCGTGACCAGGTCCTCCCAGGGCTCACCCTCGGTGGTT
GTTGCACCATCACCCAAAACCAAGGGGCAGAAAGCAGAAGATGTCCCTGTGAGGATTGCACTGGGTGCAA
GTTCCTGTGAAATATGCCACGAGGTGTTCAAATCAAAAAACGTGCGTGTGCTCAAATGTGGGCACAAGTA
TCACAAAGGGTGCTTTAAGCAGTGGCTTAAAGGGCAGAGCGCTTGCCCGGCCTGCCAGGGTCGTGATCTC
CTGACAGAAGAGTCACCTTCTGGAAGAGGCTGGCCCAGTCAGAATCAGGAGCTGCCTTCCTGCTCTTCTA
GGTAGTCACACTTCACTAAAGTGTCATCCACCAGTGTGTTGAATCCGAAGAATGACAATTTTCTACCACT
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CCCGTTAGATTGTTTTAAGTGTTTGCTTTTCATCTTTTATAGATGTAATCTGATTTTCAAAAATCATTAA
CACTTTTTAATTAGTATCGACTAAGACTTTTTCCCCCTGGAATCGAGGCTGTGTGTCCGTCATCCCAGCC
CCCGGTTGGAGCCTGCTCTTTGAACTCCGCTGCCTTCCTTAGCAGCTTCTGTCCTCTTCTGTGAGTCAGT
CAGCGAGTGCTTGGGATCCGCATCCAGCCGTGCTGAGCACACAACAGGCTGTGTGTGGAAATGGCCACCA
CCATTCTCCTTCCCCACCCCACCACAAAAAGAGAAGCTGTGTCTTTAGACAACCCTGAGGTATCTGTGTT
ACAATCGTTCTGTGTTTGATATTTGTGTAAAGTATGCATGCAGTCTTGTACTGTGACCTAAGAACAAAAC
TGTAACTGCATTAGAAACCATGAAAAAATTAGATATTGTTTTGTGACTTTTAGACAGTGGTAAATATAGA
ACCATGAATTCTGGTCACATTCCATTTCTCTCCAACATGAAGGATCAAAAAATGTTTTTCAATGTGTTCT
TTGTTCCACTGGAAACTTAGAGTCATGAGTTTATGAGCTGATTTGGTCACCTTCCTCTGCCTTTGTTCAC
TGTGAGTTCTGATGTCTTAGTGACTTAGTTCTTAGAAGCTCACGCCTTAGTTTGAAACAGATTCTCCACG
GTGGTCCCCAAAACACTGTCTGCATATCCATAAGAATTGAGCGCTATGGGTGTTAACGTGCATGAGGATC
AGTTTGCAGCAGCAAGTACAAAAGGAGAAGAGGAACATCCGTTGAATGAGTGTGTTTTGTACATAACTTC
AGATACTTGTGAACATGCCTTATATTTGTCCAACAACTGTCAGAATAAAGAACATTCTAAAATGAG

Human TTC3 mRNA sequence - var3 (public gi: 1632763) (SEQ ID NO: 204)

CTGAACTAGTTGCCAGTGATCTTGAAACGTGACAGTAACCAAGAGATAAATAGGTGACAATGACAGGAAA
ATTAGATGTAGTAAAAGAGAGTGTTTGAGAGCAGAAGCTATGGCAACTAAAGACTGGATTTGAATCCTTC
CTAGCTTGGTGACATGAGCAAATTACTTGATTTAAGTGAGCATTTTCCCATCTGTACAGTGGAGATAACG
ATAATTGTGCCTGCTAAGAAGAATTGCTGTGAAGATTAGTGAAATAATGCATGTAAAACATTTGGTACAG
TATGTGACACATAGTACAAATAGTTTGCTAGGAAGATTGTTATTATTCTTCACTTGTGATATTGTGAAGT
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AGGTACAAGTAATAGTGTTTATGATGCGCTGGTGATGATAGGAAAAGAAAGCCATTATATGGGCAAGAGC
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GCCCAAGACAGAAACACACTGAGATGGATAGGAGAATATGAGCAGTTGATAGGAAAGTTCTCAGTGGAGT
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GTGGGTGTGCAATATAAAGATTATATCCAAAGTGAGAGGAATTTGGAATTTGACATCTGCAGTATATGGT
GTAGTAAACCAATTTCTGTCCTGCAAGATTATTGCGATGCCATTAAAATAAACATCTTCTGGCCACTTCT
GTTTCAACATCAAAACAGTTCCGTAATATCACGATTGCATCCCTGTGTGGACGCCAACAATTCACGTGCT

Figure 36 part - 125

TCTGAGATAAATTTGAAGAAACTACAACATCTTGAGTTGATGGAAGATATTGTGGATTTGGCAAAGAAAG
TTGCTAATGATTCATTCCTTATTGGAGGCTTATTGAGAATTGGTTGTAAAATAGAAAATAAAATCTTGGC
AATGGAAGAAGCTCTGAATTGGATAAAATATGCAGGCGATGTAACAATTCTAACTAAATTAGGATCAATT
GACAATTGTTGGCCTATGTTAAGTATTTTCTTTACTGAATGAAGGAGAACTAATGAAAATGAAAGGAAAT
GAAGAGTTTTCCAAAGAAAGATTTGATATAGCTATTATCTATTACACCAGAGCCATTGAATATAGACCTG
AAAACTACCTTCTTTATGGTAACCGAGCTCTTTGTTTTCTTCGTACTGGACAGTTTAGAAATGCACTCGG
TGATGGAAAGAGAGCCACTATTCTGAAGAACACTTGGCCAAAGGGTCATTATCGTTATTGTGATGCTCTT
TCTATGCTGGGGGAATATGACTGGGCCCTGCAAGCAAACATAAAAGCTCAAAAACTCTGTAAAAATGACC
CTGAGGGAATCAAGGATCTAATTCAGCAGCATGTAAAGTTACAAAAACAAATAGAAGACCTACAAGGTCG
AACAGCAAATAAGGATCCAATTAAAGCCTTTTATGAAAACAGGGCCTACACACCTAGGAGTTTATCAGCA
CCTATATTTACTACTTCACTTAACTTTGTGGAGAAGGAAAGAGATTTCAGAAAAATTAATCACGAAATGG
CCAACGGTGGTAATCAGAATCTAAAGGTGGCGGATGAGGCGTTGAAGGTAGATGATTGTGACTGTCATCC
TGAATTTTCACCACCATCAAGTCAGCCTCCAAAACATAAAGGAAAACAAAAATCTCGAAACAATGAATCA
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TGGCTATATGGCCTTATTGGAGCAGCGTTGCCGCAGCGCTGCACAGGCCTTTACAGAGTTGCTGAACGGT
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AACAGATTTCTAGAAGCTCTCAATCACTTTGAGAAAGCAAGAACCTTGATTTATCGTCTTCCTGGAGTGT
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GTAAAATAGAATTTCACATGAATTGCTGGAAGAAGTTAAAAACTACAACCTTTAATGATAAAATTGACAA
GGATTTTCTACAAGGAATATGTCTTACCCCTGACTGTGAAGGTGTCATTTCTAAGATTATCATCTTCAGC
AGTGGTGGTGAAGTTAAATGTGAATTTGAACACAAGGTCATAAAAGAAAAGGTTCCTCCAAGACCTATTC
TGAAACAGAAATGTTCTAGCCTAGAGAAACTAAGACTGAAAGAAGACAAAAAATTGAAGAGAAAGATCCA
AAAAAAAGAAGCAAAAAAGTTAGCACAAGAAAGAATGGAGGAGGACTTAAGAGAAAGTAATCCACCCAAA
AATGAAGAGCAGAAAGAAACTGTAGACAATGTTCAGCGTTGTCAGTTCCTTGATGACAGAATTCTACAGT
GTATAAAGCAGTATGCTGACAAGATTAAATCCGGCATACAGAATACAGCCATGCTTCTCAAAGAATTGCT
TTCTTGGAAAGTTTTGAGCACAGAAGACTATACAACCTGTTTTTCTAGCAGAAATTTTCTAAATGAAGCA
GTGGACTATGTTATTCGCCACTTGATTCAAGAAAATAACAGAGTAAAGACAAGAATATTTCTGCATGTTT
TGAGTGAGCTTAAAGAAGTGGAGCCCAAATTAGCCGCCTGGATCCAAAAACTTAATAGCTTTGGCTTAGA
TGCCACAGGAACTTTCTTTTCTCGTTATGGAGCATCTCTTAAACTGCTTGATTTTAGTATCATGACTTTC
CTCTGGAATGAGAAATATGGTCACAAACTAGACTCTATAGAAGGAAAGCAACTTGATTATTTCTCTGAGC
CAGCATCATTGAAGGAAGCCCGTTGTTTAATATGGCTGCTAGAAGAACACAGAGACAAGTTCCCAGCATT
GCATAGTGCTTTAGATGAATTCTTTGATATAATGGACAGCCGCTGTACTGTGTTAAGGAAACAAGATAGT
GGTGAAGCACCGTTTAGTTCAACCAAGGTGAAAAACAAAAGCAAGAAAAAGAAGCCAAAGGATTCAAAGC
CTATGTTAGTTGGGTCTGGAACAACTTCAGTAACTTCAAATAATGAGATCATCACTTCAAGTGAAGACCA
TAGCAATCGAAATTCAGATTCTGCAGGCCCATTTGCAGTGCCTGACCATCTTCGGCAAGATGTAGAAGAA
TTCGAAGCTCTCTATGACCAACACAGTAACGAATATGTTGTCCGCAATAAGAAGCTATGGGACATGAACC
CAAAACAAAAATGTTCAACTCTATATGATTACTTCTCTCAGTTTTTGGAGGAACATGGTCCCTTGGACAT
GAGTAACAAGATGTTCTCTGCAGAATATGAGTTTTTCCCAGAAGAAACTCGACAGATACTAGAAAAAGCA
GGAGGTTTAAAACCTTTTCTCTTGGGATGCCCTCGTTTTGTTGTGATTGACAACTGTATTGCACTGAAGA
AGGTTGCATCACGGCTCAAGAAAAAAAGGAAGAAGAAAAACATTAAAACAAAAGTAGAAGAAATTTCAAA
AGCAGGGGAGTATGTACGAGTTAAACTACAACTGAATCCAGCTGCTAGGGAATTTAAACCAGATGTAAAG
TCTAAACCAGTGTCAGATTCATCTTCAGCACCAGCTTTTGAAAATGTGAAACCCAAACCTGTGTCTGCAA
ATTCTCCCAAGCCAGCTTGTGAAGATGTGAAGGCCAAACCAGTATCCGACAATTCTTCTAGACAAGTTTC
TGAGGATGGGCAACCCAAAGGGGTCTCTTCTAATTCTCCTAAACCAGGCTCTGAGGATGCAAATTACAAG
CGAGTCTCCTGTAATTCCCCCAAACCGGTTCTTGAGGATGTGAAACCAACTTATTGGGCTCAATCCCATT
TGGTCACAGGATACTGTACGTATCTTCCTTTCCAGAGATTTGATATCACCCAGACACCGCCAGCATACAT
AAACGTGTTACCAGGTTTGCCCCAGTACACCAGCATATATACACCCTTGGCCAGCCTTTCTCCTGAATAT
CAGCTACCAAGATCAGTACCAGTGGTGCCGTCTTTTGTAGCCAATGACAGAGCAGATAAAAATGCTGCTG
CCTATTTTGAGGGTCATCATTTGAATGCTGAGAATGTTGCTGGTCACCAGATTGCCTCTGAAACACAGAT
CCTTGAGGGCTCTTTGGGAATATCTGTAAAGTCACACTGCAGCACAGGTGATGCTCATACAGTCCTGAGT
GAGTCTAACAGAAATGATGAGCACTGTGGAAATTCTAACAACAAATGTGAAGTAATTCCAGAAAGCACCA
GTGCAGTAACAAACATTCCACACGTGCAGATGGTTGCCATACAGGTATCTTGGAACATAATACACCAAGA
AGTCAATACTGAGCCATATAATCCTTTTGAGGAACGACAAGGGGAAATTTCACGGATTGAAAAGGAGCAC
CAAGTATTACAAGACCAACTTCAAGAAGTGTATGAAAATTATGAGCAGATAAAACTTAAGGGCTTAGAAG
AGACCAGGGACCTGGAAGAGAAGTTGAAAAGGCACTTAGAAGAAAACAAGATCTCAAAGACGGAATTAGA
TTGGTTCCTTCAAGATTTGGAAAGAGAAATTAAAAAATGGCAACAGGAAAAAAAAGAAATCCAAGAAAGA
CTAAAATCACTGAAGAAGAAAATTAAAAAGGTTTCAAATGCCAGTGAAATGTATACCCAGAAAAATGATG
GAAAGGAAAAGGAACATGAATTACATCTGGATCAGTCCCTTGAAATCAGCAACACACTTACAAATGAGAA

Figure 36 part - 126

AATGAAAATAGAAGAGTATATAAAGAAAGGGAAAGAGGATTATGAAGAGAGTCATCAGAGAGCTGTGGCT
GCAGAGGTATCCGTACTTGAAAACTGGAAGGAGAGTGAAGTGTATAAGCTACAGATCATGGAGTCACAAG
CAGAAGCCTTTCTGAAGAAGCTGGGGCTGATTAGCCGTGATCCTGCAGCATATCCTGACATGGAGTCTGA
TATACGTTCATGGGAATTGTTTCTTTCTAATGTTACAAAAGAAATTGAGAAAGCAAAGTCTCAGTTTGAA
GAACAAATTAAGGCAATTAAAAATGGTTCTCGGCTCAGTGAACTTTCTAAAGTGCAGATTTCTGAGCTTT
CATTTCCTGCCTGTAACACGGTTCATCCCGAGTTACTCCCTGAGTCTTCAGGCCACGATGGCCAAGGGCT
TGTGACTTCTGCAAGCGACGTGACTGGAAACCACGCAGCACTTCACAGGGATCCTAGTGTGTTCTCTGCT
GGTGATTCCCCAGGGGAGGCTCCTTCTGCGCTGTTGCCAGGGCCACCCCCTGGTCAGCCTGAAGCCACTC
AGCTGACAGGGCCAAAACGGGCTGGCCAGGCAGCTCTGTCAGAACGAAGCCCTGTGGCTGATCGGAAGCA
GCCTGTTCCTCCAGGACGTGCTGCGCGTTCAAGCCAGTCTCCAAAAAAGCCGTTCAATAGTATTATTGAG
CACCTGTCAGTGGTATTCCCATGTTACAACAGCACTGAGCTTGCTGGTTTTATTAAAAAAGTGCGAAGCA
AAAACAAGAACTCACTCTCAGGATTGAGTATTGATGAAATTGTCCAAAGAGTGACAGAACACATTCTAGA
TGAACAGAAAAAGAAAAAGCCAAACCCAGGAAAGGACAAGAGGACTTATGAGCCCAGCTCTGCCACCCCC
GTGACCAGGTCCTCCCAGGGCTCACCCTCGGTGGTTGTTGCACCATCACCCAAAACCAAGGGGCAGAAAG
CAGAAGATGTCCCTGTGAGGATTGCACTGGGTGCAAGTTCCTGTGAAATATGCCACGAGGTGTTCAAATC
AAAAAACGTGCGTGTGCTCAAATGTGGGCACAAGTATCACAAAGGGTGCTTTAAGCAGTGGCTTAAAGGG
CAGAGCGCTTGCCCGGCCTGCCAGGGTCGTGATCTCCTGACAGAAGAGTCACCTTCTGGAAGAGGCTGGC
CCAGTCAGAATCAGGAGCTGCCTTCCTGCTCTTCTAGGTAGTCACACTTCACTAAAGTGTCATCCACCAG
TGTGTTGAATCCGAAGAATGACAATTTTCTACCACTGGTGTAAAAAACAAACATTTGAAGACCCTTGTGC
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AGTGAATACTTTGATGATTGCCAACAGTGGCTAATAAAATGACGGCTACCACACTCATGGGTCACTGGGG
CTGCGCAGGGCTCTTTGAGGTGGGTGGCTTCTTTTGGAAAGTACTATGAACGTCTCGAAGCAGTATTCTA
GTGATAAGAATTCTTAACATAGCCAAGCGCCCCACGTTTGTTCCCCACGTTTGTTCCCCTTTTCTGTTTG
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TCCTGATATGCCTATATTTTTCCTCAAAGATTCTGCATTTTAAGGATGGGCATAAGCAAACTATATTTTA
ATAATTTATAGTTAATGTTAAAATATTGGCTGATTTAGACCAAAAGATTCAAATCTCCTCTTTGTGAAAT
CCCATCTGCATTTGATTTTTTATTATTTTATGTTCCCCCGTTAGATTGTTTTAAGTGTTTGCTTTTCATC
TTTTATAGATGTAATCTGATTTTCAAAAATCATTAACACTTTTTAATTAGTATCGACTAAGACTTTTTCC
CCCTGGAATCGAGGCTGTGTGTCCGTCATCCCAGCCCCCGGTTGGAGCCTGCTCTTTGAACTCCGCTGCC
TTCCTTAGCAGCTTCTGTCCTCTTCTGTGAGTCAGTCAGCGAGTGCTTGGGATCCGCATCCAGCCGTGCT
GAGCACACAACAGGCTGTGTGTGGAAATGGCCACCACCATTCTCCTTCCCCACCCCACCACAAAAAGAGA
AGCTGTGTCTTTAGACAACCCTGAGGTATCTGTGTTACAATCGTTCTGTGTTTGATATTTGTGTAAAGTA
TGCATGCAGTCTTGTACTGTGACCTAAGAACAAAACTGTAACTGCATTAGAAACCATGAAAAAATTAGAT
ATTGTTTTGTGACTTTTAGACAGTGGTAAATATAGAACCATGAATTCTGGTCACATTCCATTTCTCTCCA
ACATGAAGGATCAAAAAATGTTTTTCAATGTGTTCTTTGTTCCACTGGAAACTTAGAGTCATGAGTTTAT
GAGCTGATTTGGTCACCTTCCTCTGCCTTTGTTCACTGTGAGTTCTGATGTCTTAGTGACTTAGTTCTTA
GAAGCTCACGCCTTAGTTTGAAACAGATTCTCCACGGTGGTCCCCAAAACACTGTCTGCATATCCATAAG
AATTGAGCGCTATGGGTGTTAACGTGCATGAGGATCAGTTTGCAGCAGCAAGTACAAAAGGAGAAGAGGA
ACATCCGTTGAATGAGTGTGTTTTGTACATAACTTCAGATACTTGTGAACATGCCTTATATTTGTCCAAC
AACTGTCAGAATAAAGAACATTCTAAAATGAG

Human TTC3 mRNA sequence - var4 (public gi: 1632761) (SEQ ID NO: 205)

CTGAACTAGTTGCCAGTGATCTTGAAACGTGACAGTAACCAAGAGATAAATAGGTGACAATGACAGGAAA
ATTAGATGTAGTAAAAGAGAGTGTTTGAGAGCAGAAGCTATGGCAACTAAAGACTGGATTTGAATCCTTC
CTAGCTTGGTGACATGAGCAAATTACTTGATTTAAGTGAGCATTTTCCCATCTGTACAGTGGAGATAACG
ATAATTGTGCCTGCTAAGAAGAATTGCTGTGAAGATTAGTGAAATAATGCATGTAAAACATTTGGTACAG
TATGTGACACATAGTACAAATAGTTTGCTAGGAAGATTGTTATTATTCTTCACTTGTGATATTGTGAAGT
TTTCATACAGCAAATTGGACATCATGAGATGGATTGATTAAATAAATAGATTTGAACTTCAAGGACTGGT
AGTGTTCTTGCTTTGGAAAGAAGAAACTTGGTTTATCCTAATAATAGTAGGATAATAATGGTGAAGTGAT
AGGTACAAGTAATAGTGTTTATGATGCGCTGGTGATGATAGGAAAAGAAAGCCATTATATGGGCAAGAGC
TAGAAGTAATAAAATGGTGCATTTTTCAGTGATGTTTGGCCTATGTAGCTATTCTCTGATAACTATAAAA
ATCCTTATTATTGAAGATTCTTCAGGAAAAAAAAACCCTTAGTCTGAAACTTTAGCACCAATCCCCCTTG
CCCCCCATTGAAATACGTATTTTTAAAACATGGCTTTTGATAATGTGAGGGTTTTTTCCTTTTTGCGATT
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GTCTGGATGCCGCCTTGGGGAGTTAGGAGATTGGCAGACTTACCCTGTACCACTCTAGCCCTACTCCTTT
GCCCAAGACAGAAACACACTGAGATGGATAGGAGAATATGAGCAGTTGATAGGAAAGTTCTCAGTGGAGT
CAGGATTTAGGTTAGGCCAGGAGATTGAGAATATAACAGTTTGTGTATGATGAAATGGCATATTTCACAG
AATGCAGTAAAAGCAGGTAGGGTACAAGTGCAGCAACAGGAAGATGTCTTTTCTTCATTCAGCAAACACT
TATTTGAGAGCTTACCATGTGCTAGGCACATACAAAGATAAATAAGATGCCCTTGATGATCCTCTATTTA
AAGGAGACATGTAAACAGGTTAACTTAGAGTAGAGATGGTGAATATGTGAACCTGAGGAAAGGAAGAAAT
AGATTAAATTATCTGGAGAGAGAGGAAAAGTCAGCAGAATGGGGACGAGAATCTTTCGGAGCTCAGTGTT
CTGATAGGAGTTATTTCCTTGGGCATAGGTTCCAAGTATTTTTCTAATATACCATAGAAGCCAGGAAAAC
TTTCTTCTGTTATCTCAAATGATTTAATTACTGACTTGAGTTTGTGTTGTCTCCTTAGACTTGTGCACCA

Figure 36 part - 127

TGGACAATTTTGCTGAGGGAGATTTCACTGTGGCGGATTATGCCTTGTTAGAAGATTGCCCTCACGTGGA
TGATTGTGTCTTTGCTGCTGAATTTATGAGCAATGATTATGTTCGTGTGACTCAGCTTTACTGTGATGGG
GTGGGTGTGCAATATAAAGATTATATCCAAAGTGAGAGGAATTTGGAATTTGACATCTGCAGTATATGGT
GTAGTAAACCAATTTCTGTCCTGCAAGATTATTGCGATGCCATTAAAATAAACATCTTCTGGCCACTTCT
GTTTCAACATCAAAACAGTTCCGTAATATCACGATTGCATCCCTGTGTGGACGCCAACAATTCACGTGCT
TCTGAGATAAATTTGAAGAAACTACAACATCTTGAGTTGATGGAAGATATTGTGGATTTGGCAAAGAAAG
TTGCTAATGATTCATTCCTTATTGGAGGCTTATTGAGAATTGGTTGTAAAATAGAAAATAAAATCTTGGC
AATGGAAGAAGCTCTGAATTGGATAAAATATGCAGGCGATGTAACAATTCTAACTAAATTAGGATCAATT
GACAATTGTTGGCCTATGTTAAGTATTTTCTTTACTGAATACAAGTACCACATAACTAAAATTGTAATGG
AAGACTGCAATTTGCTTGAAGAACTTAAAACTCAAAGTTGTATGGATTGTATAGAGGAAGGAGAACTAAT
GAAAATGAAAGGAAATGAAGAGTTTTCCAAAGAAAGATTTGATATAGCTATTATCTATTACACCAGAGCC
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TTAGAAATGCACTCGGTGATGGAAAGAGAGCCACTATTCTGAAGAACACTTGGCCAAAGGGTCATTATCG
TTATTGTGATGCTCTTTCTATGCTGGGGGAATATGACTGGGCCCTGCAAGCAAACATAAAAGCTCAAAAA
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CCTCCAAGACCTATTCTGAAACAGAAATGTTCTAGCCTAGAGAAACTAAGACTGAAAGAAGACAAAAAAT
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TAGTATCATGACTTTCCTCTGGAATGAGAAATATGGTCACAAACTAGACTCTATAGAAGGAAAGCAACTT
GATTATTTCTCTGAGCCAGCATCATTGAAGGAAGCCCGTTGTTTAATATGGCTGCTAGAAGAACACAGAG
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CCAAAGGATTCAAAGCCTATGTTAGTTGGGTCTGGAACAACTTCAGTAACTTCAAATAATGAGATCATCA
CTTCAAGTGAAGACCATAGCAATCGAAATTCAGATTCTGCAGGCCCATTTGCAGTGCCTGACCATCTTCG
GCAAGATGTAGAAGAATTCGAAGCTCTCTATGACCAACACAGTAACGAATATGTTGTCCGCAATAAGAAG
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AAACCTGTGTCTGCAAATTCTCCCAAGCCAGCTTGTGAAGATGTGAAGGCCAAACCAGTATCCGACAATT
CTTCTAGACAAGTTTCTGAGGATGGGCAACCCAAAGGGGTCTCTTCTAATTCTCCTAAACCAGGCTCTGA
GGATGCAAATTACAAGCGAGTCTCCTGTAATTCCCCCAAACCGGTTCTTGAGGATGTGAAACCAACTTAT
TGGGCTCAATCCCATTTGGTCACAGGATACTGTACGTATCTTCCTTTCCAGAGATTTGATATCACCCAGA
CACCGCCAGCATACATAAACGTGTTACCAGGTTTGCCCCAGTACACCAGCATATATACACCCTTGGCCAG
CCTTTCTCCTGAATATCAGCTACCAAGATCAGTACCAGTGGTGCCGTCTTTTGTAGCCAATGACAGAGCA
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CCTCTGAAACACAGATCCTTGAGGGCTCTTTGGGAATATCTGTAAAGTCACACTGCAGCACAGGTGATGC
TCATACAGTCCTGAGTGAGTCTAACAGAAATGATGAGCACTGTGGAAATTCTAACAACAAATGTGAAGTA
ATTCCAGAAAGCACCAGTGCAGTAACAAACATTCCACACGTGCAGATGGTTGCCATACAGGTATCTTGGA

Figure 36 part - 128

ACATAATACACCAAGAAGTCAATACTGAGCCATATAATCCTTTTGAGGAACGACAAGGGGAAATTTCACG
GATTGAAAAGGAGCACCAAGTATTACAAGACCAACTTCAAGAAGTGTATGAAAATTATGAGCAGATAAAA
CTTAAGGGCTTAGAAGAGACCAGGGACCTGGAAGAGAAGTTGAAAAGGCACTTAGAAGAAAACAAGATCT
CAAAGACGGAATTAGATTGGTTCCTTCAAGATTTGGAAAGAGAAATTAAAAAATGGCAACAGGAAAAAAA
AGAAATCCAAGAAAGACTAAAATCACTGAAGAAGAAAATTAAAAAGGTTTCAAATGCCAGTGAAATGTAT
ACCCAGAAAAATGATGGAAAGGAAAAGGAACATGAATTACATCTGGATCAGTCCCTTGAAATCAGCAACA
CACTTACAAATGAGAAAATGAAAATAGAAGAGTATATAAAGAAAGGGAAAGAGGATTATGAAGAGAGTCA
TCAGAGAGCTGTGGCTGCAGAGGTATCCGTACTTGAAAACTGGAAGGAGAGTGAAGTGTATAAGCTACAG
ATCATGGAGTCACAAGCAGAAGCCTTTCTGAAGAAGCTGGGGCTGATTAGCCGTGATCCTGCAGCATATC
CTGACATGGAGTCTGATATACGTTCATGGGAATTGTTTCTTTCTAATGTTACAAAAGAAATTGAGAAAGC
AAAGTCTCAGTTTGAAGAACAAATTAAGGCAATTAAAAATGGTTCTCGGCTCAGTGAACTTTCTAAAGTG
CAGATTTCTGAGCTTTCATTTCCTGCCTGTAACACGGTTCATCCCGAGTTACTCCCTGAGTCTTCAGGCC
ACGATGGCCAAGGGCTTGTGACTTCTGCAAGCGACGTGACTGGAAACCACGCAGCACTTCACAGGGATCC
TAGTGTGTTCTCTGCTGGTGATTCCCCAGGGGAGGCTCCTTCTGCGCTGTTGCCAGGGCCACCCCCTGGT
CAGCCTGAAGCCACTCAGCTGACAGGGCCAAAACGGGCTGGCCAGGCAGCTCTGTCAGAACGAAGCCCTG
TGGCTGATCGGAAGCAGCCTGTTCCTCCAGGACGTGCTGCGCGTTCAAGCCAGTCTCCAAAAAAGCCGTT
CAATAGTATTATTGAGCACCTGTCAGTGGTATTCCCATGTTACAACAGCACTGAGCTTGCTGGTTTTATT
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GCAGTGGCTTAAAGGGCAGAGCGCTTGCCCGGCCTGCCAGGGTCGTGATCTCCTGACAGAAGAGTCACCT
TCTGGAAGAGGCTGGCCCAGTCAGAATCAGGAGCTGCCTTCCTGCTCTTCTAGGTAGTCACACTTCACTA
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TCGAAGCAGTATTCTAGTGATAAGAATTCTTAACATAGCCAAGCGCCCCACGTTTGTTCCCCACGTTTGT
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TTACAAGAGTCTGTATTCCTGATATGCCTATATTTTTCCTCAAAGATTCTGCATTTTAAGGATGGGCATA
AGCAAACTATATTTTAATAATTTATAGTTAATGTTAAAATATTGGCTGATTTAGACCAAAAGATTCAAAT
CTCCTCTTTGTGAAATCCCATCTGCATTTGATTTTTTATTATTTTATGTTCCCCCGTTAGATTGTTTTAA
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GACTAAGACTTTTTCCCCCTGGAATCGAGGCTGTGTGTCCGTCATCCCAGCCCCCGGTTGGAGCCTGCTC
TTTGAACTCCGCTGCCTTCCTTAGCAGCTTCTGTCCTCTTCTGTGAGTCAGTCAGCGAGTGCTTGGGATC
CGCATCCAGCCGTGCTGAGCACACAACAGGCTGTGTGTGGAAATGGCCACCACCATTCTCCTTCCCCACC
CCACCACAAAAAGAGAAGCTGTGTCTTTAGACAACCCTGAGGTATCTGTGTTACAATCGTTCTGTGTTTG
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CATGAAAAAATTAGATATTGTTTTGTGACTTTTAGACAGTGGTAAATATAGAACCATGAATTCTGGTCAC
ATTCCATTTCTCTCCAACATGAAGGATCAAAAAATGTTTTTCAATGTGTTCTTTGTTCCACTGGAAACTT
AGAGTCATGAGTTTATGAGCTGATTTGGTCACCTTCCTCTGCCTTTGTTCACTGTGAGTTCTGATGTCTT
AGTGACTTAGTTCTTAGAAGCTCACGCCTTAGTTTGAAACAGATTCTCCACGGTGGTCCCCAAAACACTG
TCTGCATATCCATAAGAATTGAGCGCTATGGGTGTTAACGTGCATGAGGATCAGTTTGCAGCAGCAAGTA
CAAAAGGAGAAGAGGAACATCCGTTGAATGAGTGTGTTTTGTACATAACTTCAGATACTTGTGAACATGC
CTTATATTTGTCCAACAACTGTCAGAATAAAGAACATTCTAAAATGAG

Human TTC3 mRNA sequence - var5 (public gi: 2969902) (SEQ ID NO: 206)

ATATAATGTGAGGGTTTTTTCCTTTTTGCGATTTAGCAGTGCTGATTGTGTATTGCAGTAGTTGTGAGAG
CATTAGAAGCAGCAGTCGATAGGAGGATGGAAGGTCTGGATGCCGCCTTGGGGAGTTAGGAGATTGGCAG
ACTTACCCTGTACCACTCTAGCCCTACTCCTTTGCCCAAGACAGAAACACACTGAGATGGATAGGAGAAT
GTGAGCAGTTGATAGGAAAGTTCTCAGTGGAGTCAGGATTTAGGTTAGGCCAGGAGATTGAGAATATAAC
AGTTTGTGTATGATGAAATGGCATATTTCACAGAATGCAGTAAAAGCAGTGTAGGGTAAACCAAGTGCAG
TCAACAGCAAGATGTATTTTCGATGCCAGTTCAACATAAACATCTTATTGTGAGCAGTCTTACCATGTGC
TAGGCAACTATACAAAACAGATAAGATAAGATGCACGATTGACGATCCTCTATGTAAAGGACGACATGTA
CAATTCACGTGCTTAACTGAGAGTAGAGATTTGAAGAAACTACAACATCTTGAGTTGATGGAAGATATTG
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ATCTATTACACCAGAGCCATTGAATATAGACCTGAAAACTACCTTCTTTATGGTAACCGAGCTCTTTGTT
TTCCTCGTACTGGACAGTTTAGAAATGCACTCGGTGATGGAAAGAGAGCCACTATTCTGAAGAACACTTG

Figure 36 part - 129

GCCAAAGGGTCATTATCGTTATTGTGATGCTCTTTCTATGCTGGGGGAATATGACTGGGCCCTGCAAGCA
AACATAAAAGCTCAAAAACTCTGTAAAAATGACCCTGAGGGAATCAAGGATCTAATTCAGCAGCATGTAA
AGTTACAAAAACAAATAGAAGACCTACAAGGTCGAACAGCAAATAAGGATCCAATTAAAGCCTTTTATGA
AAACAGGGCCTACACACCTAGGAGTTTATCAGCACCTATATTTACTACTTCACTTAACTTTGTGGAGAAG
GAAAGAGATTTCAGAAAAATTAATCACGAAATGGCCAACGGTGGTAATCAGAATCTAAAGGTGGCGGATG
AGGCGTTGAAGGTAGATGATTGTGACTGTCATCCTGAATTTTCACCACCATCAAGTCAGCCTCCAAAACA
TAAAGGAAAACAAAAATCTCGAAACAATGAATCAGAAAAGTTCAGTTCTAGTTCACCATTGACTTTACCA
GCAGATTTGAAGAACATCTTGGAGAAACAGTTTTCTAAATCTTCCAGAGCTGCACACCAGGATTTTGCTA
ATATAATGAAAATGCTGAGAAGCTTAATTCAAGATGGCTATATGGCCTTATTGGAGCAGCGTTGCCGCAG
CGCTGCACAGGCCTTTACAGAGTTGCTGAACGGTTTAGATCCTCAAAAAATAAAGCAATTGAACCTGGCC
ATGATTAACTATGTTTTGGTCGTCTATGGACTTGCCATTTCTCTCCTTGGAATAGGACAGCCTGAGGAAT
TATCTGAAGCCGAAAACCAGTTTAAGAGGATTATTGAACACTACCCCAGTGAGGGCCTTGATTGCTTGGC
CTACTGTGGAATTGGAAAAGTGTATTTGAAAAAAAACAGATTTCTAGAAGCTCTCAATCACTTTGAGAAA
GCAAGAACCTTGATTTATCGTCTTCCTGGAGTGTTAACTTGGCCA

Human TTC3 mRNA sequence - var6 (public gi: 1304131) (SEQ ID NO: 207)

CCTAAAGAAAAGTATTAAGTAAATAGCAGTACAGATGGCAAATGGATTGCACAATATATCCTCTGGATCC
ATAGTGACCCTGCAGAGATAAACCTGTGATGGTCAAACAATGTGAAAACTGCTGTCAGAGACATGGGCAG
GGTGCTCTTGTTTACAGAGAAGAGGTGCAAAAATCAACTTGATGGTAGTGGGAAGATCAGGAAATGCTTC
CTGAAATTGAGTATTAAGAACTAATAGACATTAGGTGGTTGCAGAATAAGTTTTGTTTAGGAAGGACAAG
CAGTTGGGTATGACTGGCTTCTAGGTTGTGTGTTGTGGAGTGACTGGGGATAAAAGCAGGAGCAAGATCA
CAAAAGGTCTTCTATGCTTATATTAGGGAAGTTGGACTTTATTCTCAAGCTGAAGGGAAGCTGTTGCATG
GTTTTAAGCAGTAAAGTGATATGATCAGAGTTTTAGAGGATGCCAAGATTGAAGGCAAGTCTGACCAGTT
AGGAGACTGCTTGTTAAATTAGTTCAGAGGAGAAACAGTGAAGGCAGTGGCACTGGGCATGAAGAAGTAT
ATGTGTGCTAATTTTAGATTTCTTAGGGAAGCAGAAATGACAAGAGTTAGTGGTCCATTGGACAGAAATA
TTGAAGGAGACTGGGGAGTCTAGGTTGACTCCCAGGGTTTAGGTTTGGGCAGTAAAATGACATGTAGAAC
AATTAACTGATAAACAGCATACAGAAAGAGGAAAGAACTTCATTTCATATGTTTGTTTTTTGAGGAAAAGA
TGTTTGTTTTTTGAACTTCCTGATTCAGAGGGGCTTGTGGGACATCTTGGTTAAGATCCTGTAGTAGTTCT
AGTAGGGTCTAGAAGTCAAGAGATACAACCCCGCCTGGAAGGATTTGGGAGTCTTCAGCATTTGGAATTT
TGGAAGCCATTGTTTACTGCAGTGCATATGAGATAATTTAAACTGGTACATAGATAAACACTTGAAAAAA
TTTTAATAGATAGGAATTTAATGTGTATGAGAAACATAACTTGCACATCTAACCTTTGATAATCATGGAC
ATTATCACTTAGGCCAAGTGAGCTCAATAAAAGGGAAATATTAACTAAAAATATATGTGATACATGGAAA
TGGCAAAAATCACGGTGAAGCTATGCAAACGATGCAAGTTCAGAAAGTGCTGTGTTAAGTCATGGGTGTG
GTGGATAAATTCACCCAAGGAGAGAGTAAGAGTGAGAAGAAAAGAGAGTTGACATTGGGTGGCGGGGAAT
GGAGAAGAAGAACCCATGAAGGAAACTGAGGAAGAGCAGCCAGACGAATAGGAGGAAAACCAGGAGAAGA
TGGTCTTTGGAGTCCAAATGAAGAGTTCTGAGGAGGAAGTGGTCCACAGCGTCAAACTTGTGCACCATGG
ACAATTTTGCTGAGGGAGATTTCACTGTGGCGGATTATGCCTTGTTAGAAGATTGCCCTCACGTGGATGA
TTGTGTCTTTGCTGCTGAATTTATGAGCAATGATTATGTTCGTGTGACTCAGCTTTACTGTGATGGGGTG
GGTGTGCAATATAAAGATTATATCCAAAGTGAGAGGAATTTGGAATTTGACATCTGCAGTATATGGTGTA
GTAAACCAATTTCTGTCCTGCAAGATTATTGCGATGCCATTAAAATAAACATCTTCTGGCCACTTCTGTT
TCAACATCAAAACAGTTCCGTAATATCACGATTGCATCCCTGTGTGGACGCCAACAATTCACGTGCTTCT
GAGATAAATTTGAAGAAACTACAACATCTTGAGTTGATGGAAGATATTGTGGATTTGGCAAAGAAAGTTG
CTAATGATTCATTCCTTATTGGAGGCTTATTGAGAATTGGTTGTAAAATAGAAAATAAAATCTTGGCAAT
GGAAGAAGCTCTGAATTGGATAAAATATGCAGGCGATGTAACAATTCTAACTAAATTAGGATCAATTGAC
AATTGTTGGCCTATGTTAAGTATTTTCTTTACTGAATACAAGTACCACATAACTAAAATTGTAATGGAAG
ACTGCAATTTGCTTGAAGAACTTAAAACTCAAAGTTGTATGGATTGTATAGAGGAAGGAGAACTAATGAA
AATGAAAGGAAATGAAGAGTTTTCCAAAGAAAGATTTGATATAGCTATTATCTATTACACCAGAGCCATT
GAATATAGACCTGAAAACTACCTTCTTTATGGTAACCGAGCTCTTTGTTTTCTTCGTACTGGACAGTTTA
GAAATGCACTCGGTGATGGAAAGAGAGCCACTATTCTGAAGAACACTTGGCCAAAGGGTCATTATCGTTA
TTGTGATGCTCTTTCTATGCTGGGGGAATATGACTGGGCCCTGCAAGCAAACATAAAAGCTCAAAAACTC
TGTAAAAATGACCCTGAGGGAATCAAGGATCTAATTCAGCAGCATGTAAAGTTACAAAAACAAATAGAAG
ACCTACAAGGTCGAACAGCAAATAAGGATCCAATTAAAGCCTTTTATGAAAACAGGGCCTACACACCTAG
GAGTTTATCAGCACCTATATTTACTACTTCACTTAACTTTGTGGAGAAGGAAAGAGATTTCAGAAAAATT
AATCACGAAATGGCCAACGGTGGTAATCAGAATCTAAAGGTGGCGGATGAGGCGTTGAAGGTAGATGATT
GTGACTGTCATCCTGAATTTTCACCACCATCAAGTCAGCCTCCAAAACATAAAGGAAAACAAAAATCTCG
AAACAATGAATCAGAAAAGTTCAGTTCTAGTTCACCATTGACTTTACCAGCAGATTTGAAGAACATCTTG
GAGAAACAGTTTTCTAAATCTTCCAGAGCTGCACACCAGGATTTTGCTAATATAATGAAAATGCTGAGAA
GCTTAATTCAAGATGGCTATATGGCCTTATTGGAGCAGCGTTGCCGCAGCGCTGCACAGGCCTTTACAGA
GTTGCTGAACGGTTTAGATCCTCAAAAAATAAAGCAATTGAACCTGGCCATGATTAACTATGTTTTGGTC
GTCTATGGACTTGCCATTTCTCTCCTTGGAATAGGACAGCCTGAGGAATTATCTGAAGCCGAAAACCAGT
TTAAGAGGATTATTGAACACTACCCCAGTGAGGGCCTTGATTGCTTGGCCTACTGTGGAATTGGAAAAGT
GTATTTGAAAAAAAACAGATTTCTAGAAGCTCTCAATCACTTTGAGAAAGCAAGAACCTTGATTTATCGT
CTTCCTGGAGTGTTAACTTGGCCCACGAGTAATGTGATTATTGAAGAGTCTCAGCCACAAAAAATAAAGA

Figure 36 part - 130

TGCTGTTAGAGAAATTTGTTGAAGAATGCAAGTTCCCTCCAGTGCCAGATGCCATTTGTTGCTATCAGAA
GTGCCATGGATATTCTAAGATCCAGATATACATAACTGATCCAGACTTTAAGGGTTTTATACGCATCAGC
TGTTGCCAGTACTGTAAAATAGAATTTCACATGAATTGCTGGAAGAAGTTAAAAACTACAACCTTTAATG
ATAAAATTGACAAGGATTTTCTACAAGGAATATGTCTTACCCCTGACTGTGAAGGTGTCATTTCTAAGAT
TATCATCTTCAGCAGTGGTGGTGAAGTTAAATGTGAATTTGAACACAAGGTCATAAAAGAAAAGGTTCCT
CCAAGACCTATTCTGAAACAGAAATGTTCTAGCCTAGAGAAACTAAGACTGAAAGAAGACAAAAAATTGA
AGAGAAAGATCCAAAAAAAAGAAGCAAAAAAGTTAGCACAAGAAAGAATGGAGGAGGACTTAAGAGAAAG
TAATCCACCCAAAAATGAAGAGCAGAAAGAAACTGTAGACAATGTTCAGCGTTGTCAGTTCCTTGATGAC
AGAATTCTACAGTGTATAAAGCAGTATGCTGACAAGATTAAATCCGGCATACAGAATACAGCCATGCTTC
TCAAAGAATTGCTTTCTTGGAAAGTTTTGAGCACAGAAGACTATACAACCTGTTTTTCTAGCAGAAATTT
TCTAAATGAAGCAGTGGACTATGTTATTCGCCACTTGATTCAAGAAAATAACAGAGTAAAGACAAGAATA
TTTCTGCATGTTTTGAGTGAGCTTAAAGAAGTGGAGCCCAAATTAGCCGCCTGGATCCAAAAACTTAATA
GCTTTGGCTTAGATGCCACAGGAACTTTCTTTTCTCGTTATGGAGCATCTCTTAAACTGCTTGATTTTAG
TATCATGACTTTCCTCTGGAATGAGAAATATGGTCACAAACTAGACTCTATAGAAGGAAAGCAACTTGAT
TATTTCTCTGAGCCAGCATCATTGAAGGAAGCCCGTTGTTTAATATGGCTGCTAGAAGAACACAGAGACA
AGTTCCCAGCATTGCATAGTGCTTTAGATGAATTCTTTGATATAATGGACAGCCGCTGTACTGTGTTAAG
GAAACAAGATAGTGGTGAAGCACCGTTTAGTTCAACCAAGGTGAAAAACAAAAGCAAGAAAAAGAAGCCA
AAGGATTCAAAGCCTATGTTAGTTGGGTCTGGAACAACTTCAGTAACTTCAAATAATGAGATCATCACTT
CAAGTGAAGACCATAGCAATCGAAATTCAGATTCTGCAGGCCCATTTGCAGTGCCTGACCATCTTCGGCA
AGATGTAGAAGAATTCGAAGCTCTCTATGACCAACACAGTAACGAATATGTTGTCCGCAATAAGAAGCTA
TGGGACATGAACCCAAAACAAAAATGTTCAACTCTATATGATTACTTCTCTCAGTTTTTGGAGGAACATG
GTCCCTTGGACATGAGTAACAAGATGTTCTCTGCAGAATATGAGTTTTTCCCAGAAGAAACTCGACAGAT
ACTAGAAAAAGCAGGAGGTTTAAAACCTTTTCTCTTGGGATGCCCTCGTTTTGTTGTGATTGACAACTGT
ATTGCACTGAAGAAGGTTGCATCACGGCTCAAGAAAAAAAGGAAGAAGAAAACATTAAAACAAAAGTAG
AAGAAATTTCAAAAGCAGGGGAGTATGTACGAGTTAAACTACAACTGAATCCAGCTGCTAGGGAATTTAA
ACCAGATGTAAAGTCTAAACCAGTGTCAGATTCATCTTCAGCACCAGCTTTTGAAAATGTGAAACCCAAA
CCTGTGTCTGCAAATTCTCCCAAGCCAGCTTGTGAAGATGTGAAGGCCAAACCAGTATCCGACAATTCTT
CTAGACAAGTTTCTGAGGATGGGCAACCCAAAGGGGTCTCTTCTAATTCTCCTAAACCAGGCTCTGAGGA
TGCAAATTACAAGCGAGTCTCCTGTAATTCCCCCAAACCGGTTCTTGAGGATGTGAAACCAACTTATTGG
GCTCAATCCCATTTGGTCACAGGATACTGTACGTATCTTCCTTTCCAGAGATTTGATATCACCCAGACAC
CGCCAGCATACATAAACGTGTTACCAGGTTTGCCCCAGTACACCAGCATATATACACCCTTGGCCAGCCT
TTCTCCTGAATATCAGCTACCAAGATCAGTACCAGTGGTGCCGTCTTTTGTAGCCAATGACAGAGCAGAT
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TACAGTCCTGAGTGAGTCTAACAGAAATGATGAGCACTGTGGAAATTCTAACAACAAATGTGAAGTAATT
CCAGAAAGCACCAGTGCAGTAACAAACATTCCACACGTGCAGATGGTTGCCATACAGGTATCTTGGAACA
TAATACACCAAGAAGTCAATACTGAGCCATATAATCCTTTTGAGGAACGACAAGGGGAAATTTCACGGAT
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AAGGGCTTAGAAGAGACCAGGGACCTGGAAGAGAAGTTGAAAAGGCACTTAGAAGAAAACAAGATCTCAA
AGACGGAATTAGATTGGTTCCTTCAAGATTTGGAAAGAGAAATTAAAAAATGGCAACAGGAAAAAAAAGA
AATCCAAGAAAGACTAAAATCACTGAAGAAGAAAATTAAAAAGGTTTCAAATGCCAGTGAAATGTATACC
CAGAAAAATGATGGAAAGGAAAAGGAACATGAATTACATCTGGATCAGTCCCTTGAAATCAGCAACACAC
TTACAAATGAGAAAATGAAAATAGAAGAGTATATAAAGAAAGGGAAAGAGGATTATGAAGAGAGTCATCA
GAGAGCTGTGGCTGCAGAGGTATCCGTACTTGAAAACTGGAAGGAGAGTGAAGTGTATAAGCTACAGATC
ATGGAGTCACAAGCAGAAGCCTTTCTGAAGAAGCTGGGGCTGATTAGCCGTGATCCTGCAGCATATCCTG
ACATGGAGTCTGATATACGTTCATGGGAATTGTTTCTTTCTAATGTTACAAAAGAAATTGAGAAAGCAAA
GTCTCAGTTTGAAGAACAAATTAAGGCAATTAAAAATGGTTCTCGGCTCAGTGAACTTTCTAAAGTGCAG
ATTTCTGAGCTTTCATTTCCTGCCTGTAACACGGTTCATCCCGAGTTACTCCCTGAGTCTTCAGGCCACG
ATGGCCAAGGGCTTGTGACTTCTGCAAGCGACGTGACTGGAAACCACGCAGCACTTCACAGGGATCCTAG
TGTGTTCTCTGCTGGTGATTCCCCAGGGGAGGCTCCTTCTGCGCTGTTGCCAGGGCCACCCCCTGGTCAG
CCTGAAGCCACTCAGCTGACAGGGCCAAAACGGGCTGGCCAGGCAGCTCTGTCAGAACGAAGCCCTGTGG
CTGATCGGAAGCAGCCTGTTCCTCCAGGACGTGCTGCGCGTTCAAGCCAGTCTCCAAAAAAGCCGTTCAA
TAGTATTATTGAGCACCTGTCAGTGGTATTCCCATGTTACAACAGCACTGAGCTTGCTGGTTTTATTAAA
AAAGTGCGAAGCAAAAACAAGAACTCACTCTCAGGATTGAGTATTGATGAAATTGTCCAAAGAGTGACAG
AACACATTCTAGATGAACAGAAAAAGAAAAAGCCAAACCCAGGAAAGGACAAGAGGACTTATGAGCCCAG
CTCTGCCACCCCCGTGACCAGGTCCTCCCAGGGCTCACCCTCGGTGGTTGTTGCACCATCACCCAAAACC
AAGGGGCAGAAAGCAGAAGATGTCCCTGTGAGGATTGCACTGGGTGCAAGTTCCTGTGAAATATGCCACG
AGGTGTTCAAATCAAAAAACGTGCGTGTGCTCAAATGTGGGCACAAGTATCACAAAGGGTGCTTTAAGCA
GTGGCTTAAAGGGCAGAGCGCTTGCCCGGCCTGCCAGGGTCGTGATCTCCTGACAGAAGAGTCACCTTCT
GGAAGAGGCTGGCCCAGTCAGAATCAGGAGCTGCCTTCCTGCTCTTCTAGGTAGTCACACTTCACTAAAG
TGTCATCCACCAGTGTGTTGAATCCGAAGAATGACAATTTTCTACCACTGGTGTAAAAAACAAACATTTG
AAGACCCTTGTGCATTGTGTGTCACAAAGCTAAATACATGGAAATCGTTAATATCGCTGATATTAAGTAA
TTTCCCCACTCTGAGTGAATACTTTGATGATTGCCAACAGTGGCTAATAAAATGACGGCTACCACACTCA

Figure 36 part - 131

TGGGTCACTGGGCTGCGCAGGGCTCTTTGAGGTGGGTGGCTTCTTTTGGAAAGTACTATGAACGTCTCGA
AGCAGTATTCTAGTGATAAGAATTCTTAACATAGCCAAGCGCCCCACGTTTGTTCCCCACGTTTGTTCCC
CTTTTCTGTTTGAAAAACCTGTTCTGGTAGCTCCACAAGAGAGATGATACTGACTTTTTAAATTTTTTAC
AAGAGTCTGTATTCCTGATATGCCTATATTTTTCCTCAAAGATTCTGCATTTTAAGGATGGGCATAAGCA
AACTATATTTTAATAATTTATAGTTAATGTTAAAATATTGGCTGATTTAGACCAAAAGATTCAAATCTCC
TCTTTGTGAAATCCCATCTGCATTTGATTTTTTATTATTTTATGTTCCCCCGTTAGATTGTTTTAAGTGT
TTGCTTTTCATCTTTTATAGATGTAATCTGATTTTCAAAAATCATTAACACTTTTTAATTAGTATCGACT
AAGACTTTTTCCCCCTGGAATCGAGGCTGTGTGTCCGTCATCCCAGCCCCCGGTTGGAGCCTGCTCTTTG
AACTCCGCTGCCTTCCTTAGCAGCTTCTGTCCTCTTCTGTGAGTCAGTCAGCGAGTGCTTGGGATCCGCA
TCCAGCCGTGCTGAGCACACAACAGGCTGTGTGTGGAAATGGCCACCACCATTCTCCTTCCCCACCCCAC
CACAAAAAGAGAAGCTGTGTCTTTAGACAACCCTGAGGTATCTGTGTTACAATCGTTCTGTGTTTGATAT
TTGTGTAAAGTATGCATGCAGTCTTGTACTGTGACCTAAGAACAAAACTGTAACTGCATTAGAAACCATG
AAAAAATTAGATATTGTTTTGTGACTTTTAGACAGTGGTAAATATAGAACCATGAATTCTGGTCACATTC
CATTTCTCTCCAACATGAAGGATCAAAAAATGTTTTTCAATGTGTTCTTTGTTCCACTGGGAAACTTAGA
GTCATGAGTTTATGAGGCTGGATTTGGGCACCTTTCCTTTGCCTTTGGTTCACTGTGAGTTCTGATGTCC
TAGTGACTTAGGTCTTAGAAGCTCACGCCTTAGTTTGAAACAGATTCTCCACGGTGGTCCCCAAAACACT
GTCTGCATATCCATAAGAATTGAACGCTATGGGTGTTAACGTGCATGAGGATCAGTTTGCAGCAGCAAGT
ACAAAAGGAGAAGAGGAACATCCGTTGAATGAGTGTGTTTTGTACATAACTTCAGATACTTGTGAACATG
CCTTATATTTGTCCAACAACTGTCAGAATAAAGAACATTCTAAAATGAG

Human TTC3 Protein sequence - var1 (public gi: 2662364) (SEQ ID NO: 308)

IKINIFWPLLFQHQNSSVISRLHPCVDANNSRASEINLKKLQHLELMEDIVDLAKKVANDSFLIGGLLRI
GCKIENKILAMEEALNWIKYAGDVTILTKLGSIDNCWPMLSIFFTEYKYHITKIVMEDCNLLEELKTQSC
MDCIEEGELMKMKGNEEFSKERFDIAIIYYTRAIEYRPENYLLYGNRALCFLRTGQFRNALGDGKRATIL
KNTWPKGHYRYCDALSMLGEYDWALQANIKAQKLCKNDPEGIKDLIQQHVKLQKQIEDLQGRTANKDPIK
AFYENRAYTPRSLSAPIFTTSLNFVEKERDFRKINHEMANGGNQNLKVADEALKVDDCDCHPEFSPPSSQ
PPKHKGKQKSRNNESEKFSSSSPLTLPADLKNILEKQFSKSSRAAHQDFANIMKMLRSLIPDGYMALLEQ
RCRSAAQAFTELLNGLDPQKIKQLNLAMINYVLVVYGLAISLLGIGQPEELSEAENQFKRIIEHYPSEGL
DCLAYCGIGKVYLKKNRFLEALNHFEKARTLIYRLPGVLTWPTSNVIIEESQPQKIKMLLEKFVEECKFP
PVPDAICCYQKCHGYSKIQIYITDPDFKGFIRISCCQYCKIEFHMNCWKKLKTTTFNDKIDKDFLQGICL
TPDCEGVISKIIIFSSGGEVKCEFEHKVIKEKVPPRPILKQKCSSLEKLRLKEDKKLKRKIQKKEAKKLA
QERMEEDLRESNPPKNEEQKETVDNVQRCQFLDDRILQCIKQYADKIKSGIQNTATLLKELLSWKVLSTE
DYTTCFSSRNFLNEAVDYVIRHLIQENNRVKTRIFLHVLSELKEVEPKLAAWIQKLNSFGLDATGTFFSR
YGASLKLLDFSIMTFLWNEKYGHKLDSIEGKQLDYFSEPASLKEARCLIWLLEEHRDKFPALHSALDEFF
DIMDSRCTVLRKQDSGEAPFSSTKVKNKSKKKKPKDSKPMLVGSGTTSVTSNNEIITSSEDHSNRNSDSA
GPFAVPDHLRQDVEEFEALYDQHSNEYVVRNKKLWDMNPKQKCSTLYDYFSQFLEEHGPLDMSNKMFSAE
YEFFPEETRQILEKAGGLKPFLLGCPRFVVIDNCIALKKVASRLKKKRKKKNIKTKVEEISKAGEYVRVK
LQLNPAAREFKPDVKSKPVSDSSSAPAFENVKPKPVSANSPKPACEDVKAKPVSDNSSRQVSEDGQPKGV
SSNSPKPGSEDANYKRVSCNSPKPVLEDVKPTYWAQSHLVTGYCTYLPFQRFDITQTPPAYINVLPGLPQ
YTSIYTPLASLSPEYQLPRSVPVVPSFVANDRADKNAAAYFEGHHLNAENVAGHQIASETQILEGSLGIS
VKSHCSTGDAHTVLSESNRNDEHCGNSNNKCEVIPESTSAVTNIPHVQMVAIQVSWNIIHQEVNTEPYNP
FEERQGEISRIEKEHQVLQDQLQEVYENYEQIKLKGLEETRDLEEKLKRHLEENKISKTELDWFLQDLER
EIKKWQQEKKEIQERLKSLKKKIKKVSNASEMYTQKNDGKEKEHELHLDQSLEISNTLTNEKMKIEEYIK
KGKEDYEESHQRAVAAEVSVLENWKESEVYKLQIMESQAEAFLKKLGLISRDPAAYPDMESDIRSWELFL
SNVTKVIEKAKSQFEEQIKAIKNGSRLSELSKVQISELSFPACNTVHPELLPESSGDDGQGLVTSASDVT
GNHAALHRDPSVFSAGDSPGEAPSALLPGPPPGQPEATQLTGPKRAGQAALSERSPVTDRKQPVPPGRAA
RSSQSPKKPFNSIIEHLSVVFPCYNSTELAGFIKKVRSKNKNSLSGLSIDEIVQRVTEHILDEQKKKKPN
PGKDKRTYEPSSATPVTRSSQGSPSVVVAPSPKTKGQKAEDVPVRIALGASSCEICHEVFKSKNVRVLKC
GHKYHKGCFKQWLKGQSACPACQGRDLLTEESPSGRGWPSQNQELPSCSSR

Human TTC3 Protein sequence - var2 (public gi: 1632766) (SEQ ID NO: 309)

MLGEYDWALQANIKAQKLCKNDPEGIKDLIQQHVKLQKQIEDLQGRTANKDPIKAFYENRAYTPRSLSAP
IFTTSLNFVEKERDFRKINHEMANGGNQNLKVADEALKVDDCDCHPEFSPPSSQPPKHKGKQKSRNNESE
KFSSSSPLTLPADLKNILEKQFSKSSRAAHQDFANIMKMLRSLIQDGYMALLEQRCRSAAQAFTELLNGL
DPQKIKQLNLAMINYVLVVYGLAISLLGIGQPEELSEAENQFKRIIEHYPSEGLDCLAYCGIGKVYLKKN
RFLEALNHFEKARTLIYRLPGVLTWPTSNVIIEESQPQKIKMLLEKFVEECKFPPVPDAICCYQKCHGYS
KIQIYITDPDFKGFIRISCCQYCKIEFHMNCWKKLKTTTFNDKIDKDFLQGICLTPDCEGVISKIIIFSS
GGEVKCEFEHKVIKEKVPPRPILKQKCSSLEKLRLKEDKKLKRKIQKKEAKKLAQERMEEDLRESNPPKN
EEQKETVDNVQRCQFLDDRILQCIKQYADKIKSGIQNTAMLLKELLSWKVLSTEDYTTCFSSRNFLNEAV
DYVIRHLIQENNRVKTRIFLHVLSELKEVEPKLAAWIQKLNSFGLDATGTFFSRYGASLKLLDFSIMTFL
WNEKYGHKLDSIEGKQLDYFSEPASLKEARCLIWLLEEHRDKFPALHSALDEFFDIMDSRCTVLRKQDSG
EAPFSSTKVKNKSKKKKPKDSKPMLVGSGTTSVTSNNEIITSSEDHSNRNSDSAGPFAVPDHLRQDVEEF

Figure 36 part - 132

EALYDQHSNEYVVRNKKLWDMNPKQKCSTLYDYFSQFLEEHGPLDMSNKMFSAEYEFFPEETRQILEKAG
GLKPFLLGCPRFVVIDNCIALKKVASRLKKKRKKKNIKTKVEEISKAGEYVRVKLQLNPAAREFKPDVKS
KPVSDSSSAPAFENVKPKPVSANSPKPACEDVKAKPVSDNSSRQVSEDGQPKGVSSNSPKPGSEDANYKR
VSCNSPKPVLEDVKPTYWAQSHLVTGYCTYLPFQRFDITQTPPAYINVLPGLPQYTSIYTPLASLSPEYQ
LPRSVPVVPSFVANDRADKNAAAYFEGHHLNAENVAGHQIASETQILEGSLGISVKSHCSTGDAHTVLSE
SNRNDEHCGNSNNKCEVIPESTSAVTNIPHVQMVAIQVSWNIIHQEVNTEPYNPFEERQGEISRIEKEHQ
VLQDQLQEVYENYEQIKLKGLEETRDLEEKLKRHLEENKISKTELDWFLQDLEREIKKWQQEKKEIQERL
KSLKKKIKKVSNASEMYTQKNDGKEKEHELHLDQSLEISNTLTNEKMKIEEYIKKGKEDYEESHQRAVAA
EVSVLENWKESEVYKLQIMESQAEAFLKKLGLISRDPAAYPDMESDIRSWELFLSNVTKEIEKAKSQFEE
QIKAIKNGSRLSELSKVQISELSFPACNTVHPELLPESSGHDGQGLVTSASDVTGNHAALHRDPSVFSAG
DSPGEAPSALLPGPPPGQPEATQLTGPKRAGQAALSERSPVADRKQPVPPGRAARSSQSPKKPFNSIIEH
LSVVFPCYNSTELAGFIKKVRSKNKNSLSGLSIDEIVQRVTEHILDEQKKKKPNPGKDKRTYEPSSATPV
TRSSQGSPSVVVAPSPKTKGQKAEDVPVRIALGASSCEICHEVFKSKNVRVLKCGHKYHKGCFKQWLKGQ
SACPACQGRDLLTEESPSGRGWPSQNQELPSCSSR

Human TTC3 Protein sequence - var3 (public gi: 1632764) (SEQ ID NO: 310)

MKMKGNEEFSKERFDIAIIYYTRAIEYRPENYLLYGNRALCFLRTGQFRNALGDGKRATILKNTWPKGHY
RYCDALSMLGEYDWALQANIKAQKLCKNDPEGIKDLIQQHVKLQKQIEDLQGRTANKDPIKAFYENRAYT
PRSLSAPIFTTSLNFVEKERDFRKINHEMANGGNQNLKVADEALKVDDCDCHPEFSPPSSQPPKHKGKQK
SRNNESEKFSSSSPLTLPADLKNILEKQFSKSSRAAHQDFANIMKMLRSLIQDGYMALLEQRCRSAAQAF
TELLNGLDPQKIKQLNLAMINYVLVVYGLAISLLGIGQPEELSEAENQFKRIIEHYPSEGLDCLAYCGIG
KVYLKKNRFLEALNHFEKARTLIYRLPGVLTWPTSNVIIEESQPQKIKMLLEKFVEECKFPPVPDAICCY
QKCHGYSKIQIYITDPDFKGFIRISCCQYCKIEFHMNCWKKLKTTTFNDKIDKDFLQGICLTPDCEGVIS
KIIIFSSGGEVKCEFEHKVIKEKVPPRPILKQKCSSLEKLRLKEDKKLKRKIQKKEAKKLAQERMEEDLR
ESNPPKNEEQKETVDNVQRCQFLDDRILQCIKQYADKIKSGIQNTAMLLKELLSWKVLSTEDYTTCFSSR
NFLNEAVDYVIRHLIQENNRVKTRIFLHVLSELKEVEPKLAAWIQKLNSFGLDATGTFFSRYGASLKLLD
FSIMTFLWNEKYGHKLDSIEGKQLDYFSEPASLKEARCLIWLLEEHRDKFPALHSALDEFFDIMDSRCTV
LRKQDSGEAPFSSTKVKNKSKKKKPKDSKPMLVGSGTTSVTSNNEIITSSEDHSNRNSDSAGPFAVPDHL
RQDVEEFEALYDQHSNEYVVRNKKLWDMNPKQKCSTLYDYFSQFLEEHGPLDMSNKMFSAEYEFFPEETR
QILEKAGGLKPFLLGCPRFVVIDNCIALKKVASRLKKKRKKKNIKTKVEEISKAGEYVRVKLQLNPAARE
FKPDVKSKPVSDSSSAPAFENVKPKPVSANSPKPACEDVKAKPVSDNSSRQVSEDGQPKGVSSNSPKPGS
EDANYKRVSCNSPKPVLEDVKPTYWAQSHLVTGYCTYLPFQRFDITQTPPAYINVLPGLPQYTSIYTPLA
SLSPEYQLPRSVPVVPSFVANDRADKNAAAYFEGHHLNAENVAGHQIASETQILEGSLGISVKSHCSTGD
AHTVLSESNRNDEHCGNSNNKCEVIPESTSAVTNIPHVQMVAIQVSWNIIHQEVNTEPYNPFEERQGEIS
RIEKEHQVLQDQLQEVYENYEQIKLKGLEETRDLEEKLKRHLEENKISKTELDWFLQDLEREIKKWQQEK
KEIQERLKSLKKKIKKVSNASEMYTQKNDGKEKEHELHLDQSLEISNTLTNEKMKIEEYIKKGKEDYEES
HQRAVAAEVSVLENWKESEVYKLQIMESQAEAFLKKLGLISRDPAAYPDMESDIRSWELFLSNVTKEIEK
AKSQFEEQIKAIKNGSRLSELSKVQISELSFPACNTVHPELLPESSGHDGQGLVTSASDVTGNHAALHRD
PSVFSAGDSPGEAPSALLPGPPPGQPEATQLTGPKRAGQAALSERSPVADRKQPVPPGRAARSSQSPKKP
FNSIIEHLSVVFPCYNSTELAGFIKKVRSKNKNSLSGLSIDEIVQRVTEHILDEQKKKKPNPGKDKRTYE
PSSATPVTRSSQGSPSVVVAPSPKTKGQKAEDVPVRIALGASSCEICHEVFKSKNVRVLKCGHKYHKGCF
KQWLKGQSACPACQGRDLLTEESPSGRGWPSQNQELPSCSSR

Human TTC3 Protein sequence - var4 (public gi: 1632762) (SEQ ID NO: 311)

MDNFAEGDFTVADYALLEDCPHVDDCVFAAEFMSNDYVRVTQLYCDGVGVQYKDYIQSERNLEFDICSIW
CSKPISVLQDYCDAIKINIFWPLLFQHQNSSVISRLHPCVDANNSRASEINLKKLQHLELMEDIVDLAKK
VANDSFLIGGLLRIGCKIENKILAMEEALNWIKYAGDVTILTKLGSIDNCWPMLSIFFTEYKYHITKIVM
EDCNLLEELKTQSCMDCIEEGELMKMKGNEEFSKERFDIAIIYYTRAIEYRPENYLLYGNRALCFLRTGQ
FRNALGDGKRATILKNTWPKGHYRYCDALSMLGEYDWALQANIKAQKLCKNDPEGIKDLIQQHVKLQKQI
EDLQGRTANKDPIKAFYENRAYTPRSLSAPIFTTSLNFVEKERDFRKINHEMANGGNQNLKVADEALKVD
DCDCHPEFSPPSSQPPKHKGKQKSRNNESEKFSSSSPLTLPADLKNILEKQFSKSSRAAHQDFANIMKML
RSLIQDGYMALLEQRCRSAAQAFTELLNGLDPQKIKQLNLAMINYVLVVYGLAISLLGIGQPEELSEAEN
QFKRIIEHYPSEGLDCLAYCGIGKVYLKKNRFLEALNHFEKARTLIYRLPGVLTWPTSNVIIEESQPQKI
KMLLEKFVEECKFPPVPDAICCYQKCHGYSKIQIYITDPDFKGFIRISCCQYCKIEFHMNCWKKLKTTTF
NDKIDKDFLQGICLTPDCEGVISKIIIFSSGGEVKCEFEHKVIKEKVPPRPILKQKCSSLEKLRLKEDKK
LKRKIQKKEAKKLAQERMEEDLRESNPPKNEEQKETVDNVQRCQFLDDRILQCIKQYADKIKSGIQNTAM
LLKELLSWKVLSTEDYTTCFSSRNFLNEAVDYVIRHLIQENNRVKTRIFLHVLSELKEVEPKLAAWIQKL
NSFGLDATGTFFSRYGASLKLLDFSIMTFLWNEKYGHKLDSIEGKQLDYFSEPASLKEARCLIWLLEEHR
DKFPALHSALDEFFDIMDSRCTVLRKQDSGEAPFSSTKVKNKSKKKKPKDSKPMLVGSGTTSVTSNNEII
TSSEDHSNRNSDSAGPFAVPDHLRQDVEEFEALYDQHSNEYVVRNKKLWDMNPKQKCSTLYDYFSQFLEE
HGPLDMSNKMFSAEYEFFPEETRQILEKAGGLKPFLLGCPRFVVIDNCIALKKVASRLKKKRKKKNIKTK
VEEISKAGEYVRVKLQLNPAAREFKPDVKSKPVSDSSSAPAFENVKPKPVSANSPKPACEDVKAKPVSDN

Figure 36 part - 133

SSRQVSEDGQPKGVSSNSPKPGSEDANYKRVSCNSPKPVLEDVKPTYWAQSHLVTGYCTYLPFQRFDITQ
TPPAYINVLPGLPQYTSIYTPLASLSPEYQLPRSVPVVPSFVANDRADKNAAAYFEGHHLNAENVAGHQI
ASETQILEGSLGISVKSHCSTGDAHTVLSESNRNDEHCGNSNNKCEVIPESTSAVTNIPHVQMVAIQVSW
NIIHQEVNTEPYNPFEERQGEISRIEKEHQVLQDQLQEVYENYEQIKLKGLEETRDLEEKLKRHLEENKI
SKTELDWFLQDLEREIKKWQQEKKEIQERLKSLKKKIKKVSNASEMYTQKNDGKEKEHELHLDQSLEISN
TLTNEKMKIEEYIKKGKEDYEESHQRAVAAEVSVLENWKESEVYKLQIMESQAEAFLKKLGLISRDPAAY
PDMESDIRSWELFLSNVTKEIEKAKSQFEEQIKAIKNGSRLSELSKVQISELSFPACNTVHPELLPESSG
HDGQGLVTSASDVTGNHAALHRDPSVFSAGDSPGEAPSALLPGPPPGQPEATQLTGPKRAGQAALSERSP
VADRKQPVPPGRAARSSQSPKKPFNSIIEHLSVVFPCYNSTELAGFIKKVRSKNKNSLSGLSIDEIVQRV
TEHILDEQKKKKPNPGKDKRTYEPSSATPVTRSSQGSPSVVVAPSPKTKGQKAEDVPVRIALGASSCEIC
HEVFKSKNVRVLKCGHKYHKGCFKQWLKGQSACPACQGRDLLTEESPSGRGWPSQNQELPSCSSR

Human TTC3 Protein sequence - var5 (public gi: 2969903) (SEQ ID NO: 312)
DLKKLQHLELMEDIVDLARKVANDSFLIGGLLRIGCKIENKILAMEEALNWIKYAGDVTILTKLGSIDNC
WPMLSIFFTEYKYHITKIVMEDCNLLEELKTQSCMDCIEEGGLMKMKGNEEFSKERFDIAIIYYTRAIEY
RPENYLLYGNRALCFPRTGQFRNALGDGKRATILKNTWPKGHYRYCDALSMLGEYDWALQANIKAQKLCK
NDPEGIKDLIQQHVKLQKQIEDLQGRTANKDPIKAFYENRAYTPRSLSAPIFTTSLNFVEKERDFRKINH
EMANGGNQNLKVADEALKVDDCDCHPEFSPPSSQPPKHKGKQKSRNNESEKFSSSSPLTLPADLKNILEK
QFSKSSRAAHQDFANIMKMLRSLIQDGYMALLEQRCRSAAQAFTELLNGLDPQKIKQLNLAMINYVLVVY
GLAISLLGIGQPEELSEAENQFKRIIEHYPSEGLDCLAYCGIGKVYLKKNRFLEALNHFEKARTLIYRLP
GVLTWP

Unigene Name: UBE2N Unigene ID: Hs.458359

Human UBE2N mRNA sequence - var1 (public gi: 37577134) (SEQ ID NO: 208)
CGCGCGCGCAGTCGCGCGCGGGTCGTGCCGTACCACCGTCGCGGGCAGGCTCGGCCACGAGCGCCAGAGC
CCCGCGCCTCCCCTCGCGGCCTGTCCCAAGTCCCTGCCCCGCAACAGAGCGTCACTTCCGCCATCCCCGG
CAGCGGTTGGGGCGGGGCGCACGGGGGAGGGGGCCAGGTCGGAGGGAAGCCCGCCCGTGCCCGAGCCCGC
GCCCGAGCAGGGACTACATTTCCCGAGGGGCCTCGGCGGCGGCTGCGGCGACGGGCGCGGCAACGTCCCC
CGGAAGTGGAGCCCGGGACTTCCACTCGTGCGTGAGGCGAGAGGAGCCGGAGACGAGACCAGAGGCCGAA
CTCGGGTTCTGACAAGATGGCCGGGCTGCCCCGCAGGATCATCAAGGAAACCCAGCGTTTGCTGGCAGAA
CCAGTTCCTGGCATCAAAGCCGAACCAGATGAGAGCAACGCCCGTTATTTTCATGTGGTCATTGCTGGCC
CTCAGGATTCCCCCTTTGAGGGAGGGACTTTTAAACTTGAACTATTCCTTCCAGAAGAATACCCAATGGC
AGCCCCTAAAGTACGTTTCATGACCAAAATTTATCATCCTAATGTAGACAAGTTGGGAAGAATATGTTTA
GATATTTTGAAAGATAAGTGGTCCCCAGCACTGCAGATCCGCACAGTTCTGCTATCGATCCAGGCCTTGT
TAAGTGCTCCCAATCCAGATGATCCATTAGCAAATGATGTAGCGGAGCAGTGGAAGACCAACGAAGCCCA
AGCCATAGAAACAGCTAGAGCATGGACTAGGCTATATGCCATGAATAATATTTAAATTGATACGATCATC
AAGTGTGCATCACTTCTCCTGTTCTGCCAAGACTTCCTCCTCTTTGTTTGCATTTAATGGACACAGTCTT
AGAAACATTACAGAATAAAAAAGCCCAGACATCTTCAGTCCTTTGGTGATTAAATGCACATTAGCAAATC
TATGTCTTGTCCTGATTCACTGTCATAAAGCATGAGCAGAGGCTAGAAGTATCATCTGGATTGTTGTGAA
ACGTTTAAAAGCAGTGGCCCCTCCCTGCTTTTATTCATTTCCCCCATCCTGGTTTAAGTATAAAGCACTG
TGAATGAAGGTAGTTGTCAGGTTAGCTGCAGGGGTGTGGGTGTTTTTATTTTATTTTATTTTATTTTATT
TTTGAGGGGGGAGGTAGTTTAATTTTATGGGCTCCTTTCCCCCTTTTTTGGTGATCTAATTGCATTGGTT
AAAAGCAGCTAACCAGGTCTTTAGAATATGCTCTAGCCAAGTCTAACTTTATTTAGACGCTGTAGATGGA
CAAGCTTGATTGTTGGAACCAAAATGGGAACATTAAACAAACATCACAGCCCTCACTAATAACATTGCTG
TCAAGTGTAGATTCCCCCCTTCAAAAAAAGCTTGTGACCATTTTGTATGGCTTGTCTGGAAACTTCTGTA
AATCTTATGTTTTAGTAAAATATTTTTTGTTATTCTACTTTGCCTTTGTACAGTTTATTTTACTGTGTTT
ATTTCATTTTCCCAATTTGACAATCGTATTTTAAAATTGAAACTGATGGAACATTCTTTCTTGGTCTTCA
CCATCTGACAAATTGAATGGCAAGAGGTGGATTTTGCCAGTTTCTTTTCACTGATGCAGATTTGTGTTAA
GATAGTACTGAATGGAGTATTTATAAACTGGCCCTGAGCATGCATAAAGCATCAGTATCTGACCTTTTTT
TAACCTTCTAGGAATTTGAAATAAATGTGTTTGTGTTGTCTGATTAGATGATCATTGGTGTCTTGCCACA
ATGTTTAAAAATTACTGTACAGGAAAGTCACAGCAAAGATAGCAGTTGTGACTGACATGTAGGACTTTCA
CAGTTGTGCCACATTTTTGCCTAAAATTTGGGTTATGACATTTTTCTTGGTTCTTATCTGAAAATTTCAT
CTGTAACCTTTCATGTGTGTTAAGAAACACTGATCTGATCATTTGGGATTTGCTGAGGCATTTGTGAGTC
TTCCTTATAAACCTGATGAGCAGATCTCAACTATCTAGCTTGTGTGTCATCAGAAAGGTTTATCCCTTTG
AGAGTATCAAGTCCTCAGTTAATGATTCTTGCTTTCATCCCTCCAGTATTTGCTGTGGGAGCTCGTTTTA
TTCTTTAATTTGGAATTCAGTAATTTTTCTTCTTTATTGACGAATTCCTCCCCTCACAAAACTGTTCTTT
CCCACCTCTCTCCATATCTAATTCCTGATTCTTGTTATTTTTAAGTCATAAATGTAGCCAGTCATAAATA
CATAAATGTTAACCTTCGGGTTGCAACCTTGTCTCTTGCAGTTTAAGGTAATGGATATTGTAGCCCATTT
GAATTTTCTTCACTCTTATTCTCGTAATTCTGGAGTTTCTTCAGATTGTGGTGTATTTTATTGTGCTCCT
ATGTAAGATGAAGAATTAACTATTAAAATTACATTTTCAACATACAAAAGCTTTTGATGACTGGTAACTG
GTATCCTTCCAAATAAATGCATTGCTTGGTAAAAAAAAAAAAAAAAAA

Figure 36 part - 134

Human UBE2N protein sequence - var1 (public gi: 4507793) (SEQ ID NO: 313)

MAGLPRRIIKETQRLLAEPVPGIKAEPDESNARYFHVVIAGPQDSPFEGGTFKLELFLPEEYPMAAPKVR
FMTKIYHPNVDKLGRICLDILKDKWSPALQIRTVLLSIQALLSAPNPDDPLANDVAEQWKTNEAQAIETA
RAWTRLYAMNNI

Human UBE2N pray sequence - var1 (SEQ ID NO: 209)

GCCGCCATGGNGTACCCATACGACGTACCAGATTACGCTCATATGGCCATGGAGGCCAGTGAATTCCACC
CAAGCAGTGGTATCAACGCAGAGTGGCCGAACTCGGGTTCTGACAAGATGGCCGGGCTGCCCCGCAGGAT
CATCAAGGAAACCCAGCGTTTGCTGGCAGAACCAGTTCCTGGCATCAAAGCCGAACCAGATGAGAGCAAC
GCCCGTTATTTTCATGTGGTCATTGCTGGCCCTCAGGATTCCCCCTTTGAGGGAGGGACTTTTAAACTTG
AACTATTCCTTCCAGAAGAATACCCAATGGCAGCCCCTAAAATAAGTGGTCCCCAGCACTGCAGATCCGC
ACAGTTCTGCTATCGATCCAGGCCTTGTTAAGTGCTCCCAATCCAGATGATCCATTAGCAAATGATGTAG
CGGAGCAGTGGAAGACCAACGAAGCCCAAGCCATAGAAACAGCTAGAGCATGGACTAGGCTATATGCCAT
GAATAATATTTAAATTGATACGATCATCAAGTGTGCATCACTTCTCCTGTTCTGCCAAGACTTCCTCCTC
TTTGTTTGCATTTAATGGACACAGTCTTAGAAACATTACAGAATAAAAANCCCCAGACATCTTCAGTCCT
TNGGTGATTAAATGCACATTANCAAATNTTGCCNTGTCCTGATNNCTGNCNTAANCNTGANCCNAGGCTN
AAATTTNATCTGGATNNTNGGAAACNTTNAAAACNNGGGCCCCNCCNGCTTTNTTNATTNCCCCANCCGG
NTNAANTTAAACCCNGGAATNANGGNNTTTNCNGNNACNNNGGGGGT

Human UBE2N pray sequence - var2 (SEQ ID NO: 210)

CGAGCGCCGCCTGGNNTACCCATACGACGTACCAGNATTACGCTCATATGGCCATGGNAGGCCAGTGAAT
TCCACCCAAGCAGTGGTATCAACGCAGAGTGGCCATTATGGCCGGGGGAGAGGAGCCGGAGACGAGACCA
GAGGCCGAACTCGGGTTCTGACAAGATGGCCGGGCTGCCCCGCAGGATCATCAAGGAAACCCAGCGTTTG
CTGGCAGAACCAGTTCCTGGCATCAAAGCCGAACCAGATGAGAGCAACGCCCGTTATTTTCATGTGGTCA
TTGCTGGCCCTCAGGATTCCCCCTTTGAGGGAGGGACTTTTAAACTTGAACTATTCCTTCCAGAAGAATA
CCCAATGGCAGCCCCTAAAGTACGTTTCATGACCAAAATTTATCATCCTAATGTAGACAAGTTGGGAAGA
ATATGTTTAGATATTTTGAAAGATAAGTGGTCCCCAGCACTGCAGATCCGCACAGTTCTGCTATCGATCC
AGGCCTTGTTAAGTGCTCCCAATCCAGATGATCCATTAGCAAATGATGTAGCGGAGCAGTGGAAGACCAA
CGAAGCCCAAGCCATAGAAACAGCTAGAGCATGGACTAGGCTATATGCCATGAATAATATTTAAATTGAT
ACGATCATCAAGTGTGCATCACTTCTCCTGTTCTGCCAAGACTTCNTCCTCTTTGTTTGCATTTAATGGA
CACAGTCTTANAAACNTTNNGAATAAAAANCCCANACNTTTNNNTCNTTNGTGATNAATGCCNTTANCAA
NNNTTNTNTTGNCNGNTNCCTGNNTAAACCTGNCCNAGNCTNAANTTNNNNNGGTTTTNNNAANNTTAAA
ANNNTGNCCCCCNNNTTTTTTNTTNCCCCCCNGNTNAANNAAANCNTNNANAANGNTTTTNNGTNNCCNN
GGGNGGGNTTTTTTTTTTTTTTTTTNTN

Unigene Name: UNC84B Unigene ID: Hs.406612

Human UNC84B mRNA sequence - var1 (public gi: 31742497) (SEQ ID NO: 211)

CCGCCCGCCCGCCTTGTCCCGCGTCGCCGCTCTTCGCGTGCCCGCGCGCCCCGGGCCCGGCCGCTGTGTC
GCCCTGAGCGGAGCGCCGCCCGCGGGATCCCCACGCGGAAAGGGGGCGCGCCCCCGGCGGCGGCCTGGCCT
CGGACGCCCCCGGCCGGGCTAGAAGCCGCCGCGGCAGCAGATTCTCTTCAGGGGAAGAGTCCACATCCCA
CCTCATCATGTCCCGAAGAAGCCAGCGCCTCACGCGCTACTCCCAGGGTGACGATGACGGCAGCAGCAGC
AGCGGAGGGAGCTCGGTGGCTGGGAGTCAGAGCACCCTGTTTAAAGACAGTCCTCTCAGGACCTTGAAGA
GGAAATCCAGCAACATGAAGCGCCTGTCCCCAGCGCCACAGCTGGGCCCGTCCTCTGATGCACACACCTC
CTACTACAGTGAGTCGCTGGTCCACGAGTCCTGGTTCCCACCCAGGAGCTCCCTGGAGGAACTGCATGGT
GACGCCAACTGGGGTGAGGACCTGCGGGTGCGGAGGAGGAGAGGCACGGGTGGCTCAGAGAGCAGCAGGG
CCAGCGGGCTTGTGGGGCGCAAGGCCACCGAGGACTTCCTGGGCTCTTCCTCGGGCTACTCCTCTGAGGA
CGACTACGTGGGCTACTCGGATGTGGACCAGCAGAGTTCCAGCTCGCGGCTCCGAAGCGCCGTCTCACGG
GCGGGCTCCTTACTCTGGATGGTGGCCACTTCGCCAGGCCGGCTCTTCAGACTTCTCTACTGGTGGGCTG
GCACCACCTGGTACCGCCTGACCACAGCTGCCTCCCTCCTTGACGTCTTCGTTTTAACCAGGCGCTTCTC
GTCCCTGAAGACGTTCCTCTGGTTCCTGCTGCCGCTGCTCTTGCTGACGTGCCTGACGTATGGTGCTTGG
TATTTCTACCCCTATGGGCTGCAGACATTCCACCCTGCTTTGGTTTCCTGGTGGGCAGCGAAGGACAGCA
GGAGGCCGGATGAGGGCTGGGAAGCCAGAGACTCATCGCCACATTTCCAGGCTGAGCAGCGTGTTATGTC
CCGGGTACACTCTCTGGAGCGGCGTCTGGAAGCTCTTGCTGCTGAATTTTCCTCCAACTGGCAGAAGGAG
GCCATGCGGCTGGAACGTCTGGAGCTGCGGCAAGGGGCTCCTGGCCAGGGAGGTGGTGGTGGCCTGAGCC
ACGAGGACACCCTGGCGCTGCTGGAGGGGCTAGTGAGCCGCCGTGAAGCTGCCCTGAAGGAGGATTTCCG
CAGGGAAACTGCTGCTCGCATCCAGGAAGAACTGTCTGCCCTGAGAGCAGAGCATCAGCAAGACTCAGAA
GACCTCTTCAAGAAGATCGTCCGGGCCTCCCAGGAGTCCGAGGCTCGCATCCAGCAGCTGAAGTCAGAGT

Figure 36 part - 135

GGCAAAGCATGACCCAGGAGTCCTTCCAGGAGAGCTCTGTGAAGGAGCTGAGGCGGCTGGAGGACCAGCT
GGCCGGCCTGCAGCAGGAGCTGGCGGCTCTGGCACTGAAGCAGAGCTCGGTGGCGGAAGAAGTGGGCCTG
CTGCCCCAGCAGATCCAGGCCGTGCGGGACGACGTGGAATCTCAGTTCCCGGCCTGGATCAGTCAGTTCC
TTGCCCGAGGTGGAGGGGGCCGCGTGGGGCTCCTTCAGAGAGAGGAGATGCAAGCTCAGCTGCGAGAGCT
GGAGAGCAAGATCCTCACCCATGTGGCAGAGATGCAGGGCAAGTCGGCCAGGGAAGCCGCGGCCTCCCTG
AGCCTGACGCTGCAGAAAGAAGGTGTGATTGGAGTGACAGAGGAGCAGGTGCACCACATCGTGAAGCAGG
CCCTGCAGCGCTACAGTGAGGACCGCATCGGGCTGGCAGACTACGCCCTGGAGTCAGGAGGGGCCAGCGT
CATCAGCACCCGATGTTCTGAGACCTACGAGACCAAGACGGCCCTCCTCAGCCTCTTCGGCATCCCCCTG
TGGTACCACTCCCAGTCACCCCGAGTCATCCTCCAGCCAGATGTGCACCCAGGCAACTGCTGGGCCTTCC
AGGGGCCACAAGGCTTCGCCGTGGTCCGCCTCTCTGCCCGCATCCGCCCCACAGCCGTTACCTTAGAGCA
TGTGCCCAAGGCCTTGTCACCCAACAGCACTATCTCCAGTGCCCCCAAGGACTTCGCCATCTTTGGGTTT
GACGAAGACCTGCAGCAGGAGGGGACACTCCTTGGCAAGTTCACTTACGATCAGGACGGCGAGCCTATTC
AGACGTTTCACTTTCAGGCCCCTACGATGGCCACGTACCAGGTGGTGGAGCTGCGGATCCTGACTAACTG
GGGCCACCCCGAGTACACCTGCATCTACCGCTTCAGAGTGCATGGGGAGCCCGCCCACTAGCCCTGCTTA
CTGGTGCCTGCTGCCAGCCATCTGGGAGTGGGTGAACAGCACCCCGCCGCTTCCCCCACACGCTTGCTCG
GCGCTCTGACTTCTAGGAGCACAAGAGAGGAGCCTGTGGCCCCATGCAGATGAAAAGGACGGGCAGGGTC
TCCTGAGCAGCAGGTGGCTCGAGGCGGTTAGCAGGCTCCAGCAGCTCCCTTCTTCCTTCCCTCTGTGCCC
GTGGCGTCTGCTTCCCATCCTGGGAGTGTGTATATATGTAGCATATCATGGGGGACTGGGAAGTTGGGAG
AGGTAGGACCTGACTGGTCTTGGCTGGGGTCAGGGGCTGGTGCCTGGGAGCTGATGAAGCAGGTGCCAGG
GCTGTGGGAGGGGCAAGCTACGGCCTGGGCTAGGTGAGCTGCCTCTGCCCCTGGGCAAGGAAGCGAGGCC
CTCTGGGAGGAGGGTGCTTAGCTCCAGAGCAGGATGGGACTTCCCCAGGCAGGAAGCACTTGATGGAGAG
CTGCCCAGCTCTCCTACAAGGTTAGTGCCCTCCACCTAGGGAAGCATGAACCACAGGGTCCCTGAGGGCC
TTCGACAAAAGTGTGTATTTGTCCCGGGGAGGGTAGCAGTGGGCCATGGGGCTTCTTGTGCCCTAAAGGG
GACTGGCTGCTGTGATCTTCTAAGGGGCCCAGGGCCAACCCTGTAGGCTTCCCCTCTGCTGGGGACGGTA
GTTGCTTTTCTCTCTCCTGATGCTAGGTTGGGGCCCACCCTGCTCCCTGTTCCTGCTAGGGCCTGCCAGT
GCCCCTGAGCTTGCTTTCCACATTCTCCCAGGGTATGGAGACCTAGACCTGTCTTTGGGGCCATTAGCAT
CTGGGGTTATAGCAAGAAGAGTGGGGAGCATGGAACTCCTGGGCTCTTGTGGGGACGTTCAGGGTATCGG
GGTGCGAGGTCTGTCTGCACCGGCCCCCACATCTAACCAGGCCCTGATGTAGGGGTCGTCCGCTCAGGCT
GCCCCCTTGGGCTCTTGCAGCTCTTGTTCAGGTAGTCGCCCTTCTGGTTTGTTCTCTGTGGGGCAGTTGG
TGGGGGCTGGGGGAAGAGGCTGGCAGAAGTTACCCTGGATAGGGAAGGGGGAGGAGGGGACTTTTAGAGC
CAGCAGGCCCCACTGTATTATGTATATATTTTTCAAGGTCTGTTTTTCTAACTGAAAAGCTAAGGGCTTG
ATTCCTAGCCCCGTTCTGTGGGGCACTGGGTGATACTCAGTTTCTTGTTCCTGGCCGTGGAGAGGGGCCT
GGGGCACTGGTTCCGGCTGTGTCTGGTGGTCTGGCTGCGGGGAAGGGGCAAGAAGGCGGGCAGGCCTTCA
CTGCAGCACTGAGCCTCAAATCCGCTCTGGAGCATGAGGCTGGATGCAGTGGTGGTGAGGCCGCCCCGCT
CCATCCCGAGGCAGCCAGGGTTTGTTTTGCGCTCTCCTGTCACAAATGCTGCACTATTGGTTCTTAAGTT
TTTTATCTCCAGATCCTAATTTATGCCTATGCAAAAAATAAATGACGCCCAAGAGCTG

Human UNC84B protein sequence - var1 (public gi: 31742498) (SEQ ID NO: 314)

MSRRSQRLTRYSQGDDDGSSSSGGSSVAGSQSTLFKDSPLRTLKRKSSNMKRLSPAPQLGPSSDAHTSYY
SESLVHESWFPPRSSLEELHGDANWGEDLRVRRRRGTGGSESSRASGLVGRKATEDFLGSSSGYSSEDDY
VGYSDVDQQSSSSRLRSAVSRAGSLLWMVATSPGRLFRLLYWWAGTTWYRLTTAASLLDVFVLTRRFSSL
KTFLWFLLPLLLLTCLTYGAWYFYPYGLQTFHPALVSWWAAKDSRRPDEGWEARDSSPHFQAEQRVMSRV
HSLERRLEALAAEFSSNWQKEAMRLERLELRQGAPGQGGGGGLSHEDTLALLEGLVSRREAALKEDFRRE
TAARIQEELSALRAEHQQDSEDLFKKIVRASQESEARIQQLKSEWQSMTQESFQESSVKELRRLEDQLAG
LQQELAALALKQSSVAEEVGLLPQQIQAVRDDVESQFPAWISQFLARGGGGRVGLLQREEMQAQLRELES
KILTHVAEMQGKSAREAAASLSLTLQKEGVIGVTEEQVHHIVKQALQRYSEDRIGLADYALESGGASVIS
TRCSETYETKTALLSLFGIPLWYHSQSPRVILQPDVHPGNCWAFQGPQGFAVVRLSARIRPTAVTLEHVP
KALSPNSTISSAPKDFAIFGFDEDLQQEGTLLGKFTYDQDGEPIQTFHFQAPTMATYQVVELRILTNWGH
PEYTCIYRFRVHGEPAH

Human UNC84B pray sequence - var1 (SEQ ID NO: 212)

GATTTGGNAATNCTACAGGGNATGTTTAATACCACTACAATGGATGATGTATATAACTATCTATTCGATG
ATGAAGATACCCCACCAAACCCAAAAAAAGAGATCTTTAATACGACTCGACTATAGGGCGAGCGCCGCCA
TGGAGTACCCATACGACGTACCAGATTACGCTCATATGGCCATGGAGGCCAGTGAATTCCACCCAAGCAG
TGGTATCAACGCATAGTGGAAAAGCATGACCCAGGAGTCCTTCCAGGAGAGCTCTGTGAAGGAGCTGAGG
CGGCTGGAGGACCAGCTGGCCGGCCTGCAGCAGGAGCTGGCGGCTCTGGCACTGAAGCAGAGCTCGGTGG
CGGAAGAAGTGGGCCTGCTGCCCCAGCAGATCCAGGCCGTGCGGGACGACGTGGAATCTCAGTTCCCGGC
CTGGATCAGTCAGTTCCTTGCCCGAGGTGGAGGGGGCCGCGTGGGGCTCCTTCAGAGAGAGGAGATGCAA
GCTCAGCTGCGAGAGCTGGAGAGCAAGATCCTCACCCATGTGGCAGAGATGCAGGGCAAGTCGGCCAGGG
AAGCCGCGGCCTCCCTGAGCCTGACGCTNCANAAAGAAGGTGTGATTGGAGTGACAGAGGAGCAGGTGCA
CCACATCGTGAAGCAGGCCCTGCAGCGCTACAGTGAGGACCGCATCGGGCTGGCAGACTACGCCCTGGAG
TCAGGAGGGGCCAGCGTCATCAGCACCCGATGTTCTGAGACCTACNAGACCAAGACGGNCCTNCTCAGCC

Figure 36 part - 136

TCTTNGGNATCCCCCTGGGGTACCACTCCCAGTCACCCCNAGTCATNCTCCANATGNGCACCCAGGCNAC
TGNTGGGCCTTNCAGGGGCCANNGGGNTTNNCCGGGGNCCGCNTTTTTCCCNA

Human UNC84B pray sequence - var2 (SEQ ID NO: 213)
CGCCGCCATGGTAGTACCCATACGACGTACCAGTATTACGCTCATATGGCTCATGGCAGGCCAGTGAATT
CCACCCAAGCAGTGGTATCAACGCAGAGTGGCCATTATGGCTCGGGGGACGGCTGAGCCTATTCAGACGT
TTCACTTTCAGGCCCCTACGATGGCCACGTACCAGGTGGTGGAGCTGCGGATTCTGACTAACTGGGGCCA
CCCCGAGTACACCTGCATCTACCGCTTCAGAGTGCATGGGGAGCCCGCCCACTAGCCCTGCTTACTGGTG
CCCGCTGCCAGCCATCTGGGAGTGGGTGAACAGCACCCCGCCGCTTCCCCCACACGCTTGCTCGGCGCTC
TGACTTCTAGGAGCACAAGAGAGGAGCCTGTGGCCCCATGCAGATGAAAAGGACGGGCAGGGTCTCCTGA
GCANCAGGTGGCTCGAGGCGGTTAGCANGCTCCANCAGCTCCCTTCTTCCTTCCCTCTGTGCCCGTGGCG
TCTGCTTCCCATCCTGGGAGTGTGTNTATATNTANCATATCATGGGGGACTGG

Unigene Name: VCY2IP1 Unigene ID: Hs.66048 Clone ID: GD_181

Human VCY2IP1 mRNA sequence - var1 (public gi: 22002952) (SEQ ID NO: 214)
AAGATGGCGGCGGTGGCTGGATCTGGGGCTGCCGCGGCTCCGAGCTCACTGCTCCTCGTGGTGGGCAGCG
AGTTCGGGAGCCCGGGGCTCCTCACCTACGTCCTGGAGGAGCTCGAAAGAGGCATCCGGTCTTGGGATGT
CGATCCTGGCGTCTGCAACCTTGATGAACAGCTCAAGGTCTTTGTGTCCCGACACTCTGCCACCTTCTCC
AGCATTGTGAAAGGCCAGCGGAGCCTGCACCACCGTGGAGACAACCTGGAGACCCTGGTCCTCCTGAACC
CATCAGACAAGTCCCTGTATGATGAGCTCCGGAACCTTCTGTTGGACCCTGCCTCTCACAAGCTACTGGT
GTTGGCTGGGCTCTGCCTGGAGGAGACGGGGGAGCTGCTGCTACAGACAGGGGGCTTCTCGCCTCACCAC
TTCCTCCAGGTCCTGAAGGACAGAGAGATCCGGGACATCCTGGCCACCACGCCCCCACCTGTGCAGCCGC
CCATACTCACCATCACCTGCCCCACCTTCGGTGACTGGGCTCAGCCGGCACCCGCTGTGCCTGGCCTTCA
GGGGGCGCTCCGGCTCCAGCTGCGGCTGAACCCCCCGGCGCAGCTGCCCAACTCTGAGGGCCTGTGCGAA
TTCCTGGAGTACGTGGCTGAGTCTCTGGAGCCACCGTCCCCCTTCGAGCTGCTGGAGCCCCCGACCTCCG
GGGGCTTCCTCAGGCTGGGCCGGCCCTGCTGCTACATCTTCCCTGGAGGCCTCGGGGATGCCGCCTTCTT
CGCCGTCAATGGCTTCACTGTGCTGGTCAACGGTGGCTCAAACCCCAAGTCCAGTTTCTGGAAGCTGGTG
CGGCACCTGGACCGCGTGGATGCCGTGCTGGTGACCCACCCTGGCGCCGACAGCCTCCCCGGCCTCAACA
GCCTGCTGCGGCGCAAACTGGCGGAGCGCTCCGAGGTGGCTGCTGGTGGGGGCTCCTGGGACGACAGGCT
GCGCAGGCTCATCTCCCCCAACCTGGGGGTCGTGTTCTTCAACGCCTGCGAGGCCGCGTCGCGGCTGGCG
CGCGGCGAGGATGAGGCGGAGCTGGCGCTGAGCCTCCTGGCGCAGCTGGGCATCACGCCTCTGCCACTCA
GCCGCGGCCCCGTGCCAGCCAAACCCACCGTGCTCTTCGAGAAGATGGGCGTGGGCCGGCTGGACATGTA
TGTGCTGCACCCGCCCTCCGCCGGCGCCGAGCGCACGCTGGCCTCTGTGTGCGCCCTGCTGGTGTGGCAC
CCCGCCGGCCCCGGCGAGAAGGTGGTGCGCGTGCTGTTCCCCGGTTGCACCCCGCCCGCCTGCCTCCTGG
ACGGCCTGGTCCGCCTGCAGCACTTGAGGTTCCTGCGAGAGCCCGTGGTGACGCCCCAGGACCTGGAGGG
GCCGGGGCGAGCCGAGAGCAAAGAGAGCGTGGGCTCCCGGGACAGCTCGAAGAGAGAGGGCCTCCTGGCC
ACCCACCCTAGACCTGGCCAGGAGCGCCCTGGGGTGGCCCGCAAGGAGCCAGCACGGGCTGAGGCCCCAC
GCAAGACTGAGAAAGAAGCCAAGACCCCCCGGGAGTTGAGGAAAGACCCCAAACCGAGTGTCTCCCGGAC
CCAGCCGCGGGAGGTGCGCCGGGCAGCCTCTTCTGTGCCCAACCTCAAGAAGACGAATGCCCAGGCGGCA
CCCAAGCCCCGCAAAGCGCCCAGCACGTCCCACTCTGGCTTCCCGCCGGTGGCAAATGGACCCCGCAGCC
CGCCCAGCCTCCGATGTGGAGAAGCCAGCCCCCCCAGTGCAGCCTGCGGCTCTCCGGCCTCCCAGCTGGT
GGCCACGCCCAGCCTGGAGCTGGGGCCGATCCCAGCCGGGGAGGAGAAGGCACTGGAGCTGCCTTTGGCC
GCCAGCTCAATCCCAAGGCCACGCACACCCTCCCCTGAGTCCCACCGGAGCCCCGCAGAGGGCAGCGAGC
GGCTGTCGCTGAGCCCACTGCGGGGCGGGGAGGCCGGGCCAGACGCCTCACCCACAGTGACCACACCCAC
GGTGACCACGCCCTCACTACCCGCAGAGGTGGGCTCCCCGCACTCGACCGAGGTGGACGAGTCCCTGTCG
GTGTCCTTTGAGCAGGTGCTGCCGCCATCCGCCCCCACCAGTGAGGCTGGGCTGAGCCTCCCGCTGCGTG
GCCCCCGGGCGCGGCGCTCGGCTTCCCCACACGATGTGGACCTGTGCCTGGTGTCACCCTGTGAATTTGA
GCATCGCAAGGCGGTGCCAATGGCACCGGCACCTGCGTCCCCCGGCAGCTCGAATGACAGCAGTGCCCGG
TCACAGGAACGGGCAGGTGGGCTGGGGGCCGAGGAGACGCCACCCACATCGGTCAGCGAGTCCCTGCCCA
CCCTGTCTGACTCGGATCCCGTGCCCCTGGCCCCCGGTGCGGCAGACTCAGACGAAGACACAGAGGGCTT
TGGAGTCCCTCGCCACGACCCTTTGCCTGACCCCCTCAAGGTCCCCCCACCACTGCCTGACCCATCCAGC
ATCTGCATGGTGGACCCCGAGATGCTGCCCCCCAAGACAGCACGGCAAACGGAGAACGTCAGCCGCACCC
GGAAGCCCCTGGCCCGCCCCAACTCACGCGCTGCCGCCCCCAAAGCCACTCCAGTGGCTGCTGCCAAAAC
CAAGGGGCTTGCTGGTGGGGACCGTGCCAGCCGACCACTCAGTGCCCGGAGTGAGCCCAGTGAGAAGGGA
GGCCGGGCACCCCTGTCCAGAAAGTCCTCAACCCCCAAGACTGCCACTCGAGGCCCGTCGGGGTCAGCCA
GCAGCCGGCCCGGGGTGTCAGCCACCCCACCCAAGTCCCCGGTCTACCTGGACCTGGCCTACCTGCCCAG
CGGGAGCAGCGCCCACCTGGTGGATGAGGAGTTCTTCCAGCGCGTGCGCGCGCTCTGCTACGTCATCAGT
GGCCAGGACCAGCGCAAGGAGGAAGGCATGCGGGCCGTCCTGGACGCGCTACTGGCCAGCAAGCAGCATT
GGGACCGTGACCTGCAGGTGACCCTGATCCCCACTTTCGACTCGGTGGCCATGCATACGTGGTACGCAGA
GACGCACGCCCGGCACCAGGCGCTGGGCATCACGGTGTTGGGCAGCAACAGCATGGTGTCCATGCAGGAT
GACGCCTTCCCGGCCTGCAAGGTGGAGTTCTAGCCCCATCGCCGACACGCCCCCCACTCAGCCCAGCCCG

Figure 36 part - 137

CCTGTCCCTAGATTCAGCCACATCAGAAATAAACTGTGACTAC

Human VCY2IP1 mRNA sequence - var2 (public gi: 21739762) (SEQ ID NO: 215)

CCGAAGATGGCGGCGGTGGCTGGATCTGGGGCTGCCGCGGCTCCGAGCTCACTGCTCCTCGTGGTGGGCA
GCGAGTTCGGGAGCCCGGGGCTCCTCACCTACGTCCTGGAGGAGCTCGAAAGAGGCATCCGGTCTTGGGA
TGTCGATCCTGGCGTCTGCAACCTTGATGAACAGCTCAAGGTCTTTGTGTCCCGACACTCTGCCACCTTC
TCCAGCATTGTGAAAGGCCAGCGGAGCCTGCACCACCGTGGAGACAACCTGGAGACCCTGGTCCTCCTGA
ACCCATCAGACAAGTCCCTGTATGATGAGCTCCGGAACCTTCTGTTGGACCCTGCCTCTCACAAGCTACT
GGTGTTGGCTGGGCCCTGCCTGGAGGAGACGGGGGAGCTGCTGCTACAGACAGGGGGCTTCTCGCCTCAC
CACTTCCTCCAGGTCCTGAAGGACAGAGAGATCCGGGACATCCTGGCCACCACGCCCCCACCTGTGCAGC
CGCCCATACTCACCATCACCTGCCCCACCTTCGGTGACTGGGCTCAGCTGGCACCCGCTGTGCCTGGCCT
TCAGGGGGCGCTCCGGCTCCAGCTGCGGCTGAACCCCCCGGCGCAGCTGCCCAACTCTGAGGGCCTGTGC
GAATTCCTGGAGTACGTGGCTGAGTCTCTGGAGCCACCGTCCCCCTTCGAGCTGCTGGAGCCCCCGACCT
CCGGGGGCTTCCTCAGGCTGGGCCGGCCCTGCTGCTACATCTTCCCTGGAGGCCTCGGGGATGCCGCCTT
CTTCGCCGTCAATGGCTTCACTGTGCTGGTCAACGGTGGCTCAAACCCCAAGTCCAGTTTCTGGAAGCTG
GTGCGGCACCTGGACCGCGTGGATGCCGTGCTGGTGACCCACCCTGGCGCCGACAGCCTCCCTGGCCTCA
ACAGCCTGCTGCGGCGCAAACTGGCGGAGCGCTCCGAGGTGGCTGCTGGTGGGGGCTCCTGGGACGACAG
GCTGCGCAGGCTCATCTCCCCCAACCTGGGGGTCGTGTTCTTCAACGCCTGCGAGGCCGCGTCGCGGCTG
GCGCGCGGCGAGGATGAGGCGGAGCTGGCGCTGAGCCTCCTGGCGCAGCTGGGCATCACGCCTCTGCCAC
TCAGCCGCGGCCCCGTGCCAGCCAAACCCACCGTGCTCTTCGAGAAGATGGGCGTGGGCCGGCTGGACAT
GTATGTGCTGCACCCGCCCTCCGCCGGCGCCGAGCGCACGCTGGCCTCTGTGTGCGCCCTGCTGGTGTGG
CACCCCGCCGGCCCCGGCGAGAAGGTGGTGCGCGTGCTGTTCCCCGGTTGCACCCCGCCCGCCTACCTCC
TGGACGGCCTGGTCCGCCTGCAGCACTTGAGGTTCCTGCGAGAGCCCGTGGTGACGCCCCAGGACCTGGA
GGGGCCGGGGCGAGCCGAGAGCAAAGAGAGCGTGGGCTCCCGGGACAGCTCGAAGAGAGAGGGCCTCCTG
GCCACCCACCCTAGACCTGGCCAGGAGCGCCCTGGGGTGGCCCGCAAGGAGCCAGCACGGGCTGAGGCCC
CACGCAAGACTGAGAAAGAAGCCAAGACCCCCCGGGAGTTGAAGAAAGACCCCAAACCGAGTGTCTCCCG
GACCCAGCCGCGGGAGGTGCGCCGGGCAGCCTCTTCTGTGCCCAACCTCAAGAAGACGAATGCCCAGGCG
GCACCCAAGCCCCGCAAAGCGCCCAGCACGTCCCACTCTGGCTTCCCGCCGGTGGCAAATGGACCCCGCA
GCCCGCCCAGCCTCCGATGTGGAGAAGCCAGCCCCCCCAGTGCAGCCTGCGGCTCTCCGGCCTCCCAGCT
GGTGGCCACGCCCAGCCTGGAGCTGGGGCCGATCCCAGCCGGGGAGGAGAAGGCACTGGAGCTGCCTTTG
GCCGCCAGCTCAATCCCAAGGCCACGCACACCCTCCCCTGAGTCCCACCGGAGCCCCGCAGAGGGCAGCG
AGCGGCTGTCGCTGAGCCCACTGCGGGGCGGGGAGGCCGGGCCAGACGCCTCACCCACAGTGACCACACC
CACGGTGACCACGCCCTCACTACCCGCAGAGGTGGGCTCCCCGCACTCGACCGAGGTGGACGAGTCCCTG
TCGGTGTCCTTTGAGCAGGTGCTGCCGCCATCCGCCCCCACCAGTGAGGCTGGGCTGAGCCTCCCGCTGC
GTGGCCCCCGGGCGCGGCGCTCGGCTTCCCCACACGATGTGGACCTGTGCCTGGTGTCACCCTGTGAATT
TGAGCATCGCAAGGCGGTGCCAATGGCACCGGCACCTGCGTCCCCCGGCAGCTCGAATGACAGCAGTGCC
CGGTCACAGGAACGGGCAGGTGGGCTGGGGGCCGAGGAGACGCCACCCACATCGGTCAGCGAGTCCCTGC
CCACCCTGTCTGACTCGGATCCCGTGCCCCTGGCCCCCGGTGCGGCAGACTCAGACGAAGACACAGAGGG
CTTTGGAGTCCCTCGCCACGACCCTTTGCCTGACCCCCTCAAGGTCCCCCCACCACTGCCTGACCCATCC
AGCATCTGCATGGTGGACCCCGAGATGCTGCCCCCCAAGACAGCACGGCAAACGGAGAACGTCAGCCGCA
CCCGGAAGCCCCTGGCCCGCCCCAACTCACGCGCTGCCGCCCCCAAAGCCACTCCAGTGGCTGCTGCCAA
AACCAAGGGGCTTGCTGGTGGGGACCGTGCCAGCCGACCACTCAGTGCCCGGAGTGAGCCCAGTGAGAAG
GGAGGCCGGGCACCCCTGTCCAGAAAGTCCTCAACCCCCAAGACTGCCACTCGAGGCCCGTCGGGGTCAG
CCAGCAGCCGGCCCGGGGTGTCAGCCACCCCACCCAAGTCCCCGGTCTACCTGGACCTGGCCTACCTGCC
CAGCGGGAGCAGCGCCCACCTGGTGGATGAGGAGTTCTTCCAGCGCGTGCGCGCGCTCTGCTACGTCATC
AGTGGCCAGGACCAGCGCAAGGAGGAAGGCATGCGGGCCGTCCTGGACGCGCTACTGGCCAGCAAGCAGC
ATTGGGACCGTGACCTGCAGGTGACCCTGATCCCCACTTTCGACTCGGTGGCCATGCATACGTGGTACGC
AGAGACGCACGCCCGGCACCAGGCGCTGGGCATCACGGTGTTGGGCAGCAACAGCATGGTGTCCATGCAG
GATGACGCCTTCCCGGCCTGCAAGGTGGAGTTCTAGCCCCATCGCCGACACGCCCCCCACTCAGCCCAGC
CCGCCTGTCCCTAGATTCAGCCACATCAGAAATAAACTGTGACTACACTTGGTAAAAAAAAAAAAAAAAA
AA

Human VCY2IP1 mRNA sequence - var3 (public gi: 21104445) (SEQ ID NO: 216)

CCGAGGTGGCTGCTGGTGGGGGCTCCTGGGACGACAGGCTGCGCAGGCTCATCTCCCCCAACCTGGGGGT
CGTGTTCTTCAACGCCTGCGAGGCCGCGTCGCGGCTGGCGCGCGGCGAGGATGAGGCGGAGCTGGCGCTG
AGCCTCCTGGCGCAGCTGGGCATCACGCCTCTGCCACTCAGCCGCGGCCCCGTGCCAGCCAAACCCACCG
TGCTCTTCGAGAAGATGGGCGTGGGCCGGCTGGACATGTATGTGCTGCACCCGCCCTCCGCCGGCGCCGA
GCGCACGCTGGCCTCTGTGTGCGCCCTGCTGGTGTGGCACCCCGCCGGCCCCGGCGAGAAGGTGGTGCGC
GTGCTGTTCCCCGGTTGCACCCCGCCCGCCTGCCTCCTGGACGGCCTGGTCCGCCTGCAGCACTTGAGGT
TCCTGCGAGAGCCCGTGGTGACGCCCCAGGACCTGGAGGGGCCGGGGCGAGCCGAGAGCAAAGAGAGCGT
GGGCTCCCGGGACAGCTCGAAGAGAGAGGGCCTCCTGGCCACCCACCCTAGACCTGGCCAGGAGCGCCCT
GGGGTGGCCCGCAAGGAGCCAGCACGGGCTGAGGCCCCACGCAAGACTGAGAAAGAAGCCAAGGCCCCCC

Figure 36 part - 138

GGGAGTTGAAGAAAGACCCCAAACCGAGTGTCTCCCGGACCCAGCCGCGGGAGGTGCGCCGGGCAGCCTC
TTCTGTGCCCAACCTCAAGAAGACGAATGCCCAGGCGGCACCCAAGCCCCGCAAAGCGCCCAGCACGTCC
CACTCTGGCTTCCCGCCGGTGGCAAATGGACCCCGCAGCCCGCCCAGCCTCCGATGTGGAGAAGCCAGCC
CCCCCAGTGCAGCCTGCGGCTCTCCGGCCTCCCAGCTGGTGGCCACGCCCAGCCTGGAGCTGGGGCCGAT
CCCAGCCGGGGAGGAGAAGGCACTGGAGCTGCCTTTGGCCGCCAGCTCAATCCCAAGGCCACGCACACCC
TCCCCTGAGTCCCACCGGAGCCCCGCAGAGGGCAGCGAGCGGCTGTCGCTGAGCCCACTGCGGGGCGGGG
AGGCCGGGCCAGACGCCTCACCCACAGTGACCACACCCACGGTGACCACGCCCTCACTACCCGCAGAGGT
GGGCTCCCCGCACTCGACCGAGGTGGACGAGTCCCTGTCGGTGTCCTTTGAGCAGGTGCTGCCGCCATCC
GCCCCCACCAGTGAGGCTGGGCTGAGCCTCCCGCTGCGTGGCCCCCGGGCGCGGCGCTCGGCTTCCCCAC
ACGATGTGGACCTGTGCCTGGTGTCACCCTGTGAATTTGAGCATCGCAAGGCGGTGCCAATGGCACCGGC
ACCTGCGTCCCCCGGCAGCTCGAATGACAGCAGTGCCCGGTCACAGGAACGGGCAGGTGGGCTGGGGGCC
GAGGAGACGCCACCCACATCGGTCAGCGAGTCCCTGCCCACCCTGTCTGACTCGGATCCCGTGCCCCTGG
CCCCCGGTGCGGCAGACTCAGACGAAGACACAGAGGGCTTTGGAGTCCCTCGCCACGACCCTTTGCCTGA
CCCCCTCAAGGTCCCCCCACCACTGCCTGACCCATCCAGCATCTGCATGGTGGACCCCGAGATGCTGCCC
CCCAAGACAGCACGGCAAACGGAGAACGTCAGCCGCACCCGGAAGCCCCTGGCCCGCCCCAACTCACGCG
CTGCCGCCCCCAAAGCCACTCCAGTGGCTGCTGCCAAAACCAAGGGGCTTGCTGGTGGGGACCGTGCCAG
CCGACCACTCAGTGCCCGGAGTGAGCCCAGTGAGAAGGGAGGCCGGGCACCCCTGTCCAGAAAGTCCTCA
ACCCCCAAGACTGCCACTCGAGGCCCGTCGGGGTCAGCCAGCAGCCGGCCCGGGGTGTCAGCCACCCCAC
CCAAGTCCCCGGTCTACCTGGACCTGGCCTACCTGCCCAGCGGGAGCAGCGCCCACCTGGTGGATGAGGA
GTTCTTCCAGCGCGTGCGCGCGCTCTGCTACGTCATCAGTGGCCAGGACCAGCGCAAGGAGGAAGGCATG
CGGGCCGTCCTGGACGCGCTACTGGCCAGCAAGCAGCATTGGGACCGTGACCTGCAGGTGACCCTGATCC
CCACTTTCGACTCGGTGGCCATGCATACGTGGTACGCAGAGACGCACGCCCGGCACCAGGCGCTGGGCAT
CACGGTGTTGGGCAGCAACAGCATGGTGTCCATGCAGGATGACGCCTTCCCGGCCTGCAAGGTGGAGTTC
TAGCCCCATCGCCGACACGCCCCCCACTCAGCCCAGCCCGCCTGTCCCTAGATTCAGCCACATCAGAAAT
AAACTGTGACTTCCAAAAAAAAAAA

Human VCY2IP1 mRNA sequence - var4 (public gi: 14250679) (SEQ ID NO: 217)

GGCACGAGGCCGCCTTCTTCGCCGTCAATGGCTTCACTGTGCTGGTCAACGGTGGCTCAAACCCCAAGTC
CAGTTTCTGGAAGCTGGTGCGGCACCTGGACCGCGTGGATGCCGTGCTGGTGACCCACCCTGGCGCCGAC
AGCCTCCCCGGCCTCAACAGCCTGCTGCGGCGCAAACTGGCGGAGCGCTCCGAGGTGGCTGCTGGTGGGG
GCTCCTGGGACGACAGGCTGCGCAGGCTCATCTCCCCCAACCTGGGGGTCGTGTTCTTCAACGCCTGCGA
GGCCGCGTCGCGGCTGGCGCGCGGCGAGGATGAGGCGGAGCTGGCGCTGAGCCTCCTGGCGCAGCTGGGC
ATCACGCCTCTGCCACTCAGCCGCGGCCCCGTGCCAGCCAAACCCACCGTGCTCTTCGAGAAGATGGGCG
TGGGCCGGCTGGACATGTATGTGCTGCACCCGCCCTCCGCCGGCGCCGAGCGCACGCTGGCCTCTGTGTG
CGCCCTGCTGGTGTGGCACCCCGCCGGCCCCGGCGAGAAGGTGGTGCGCGTGCTGTTCCCCGGTTGCACC
CCGCCCGCCTGCCTCCTGGACGGCCTGGTCCGCCTGCAGCACTTGAGGTTCCTGCGAGAGCCCGTGGTGA
CGCCCCAGGACCTGGAGGGGCCGGGGCGAGCCGAGAGCAAAGAGAGCGTGGGCTCCCGGGACAGCTCGAA
GAGAGAGGGCCTCCTGGCCACCCACCCTAGACCTGGCCAGGAGCGCCCTGGGGTGGCCCGCAAGGAGCCA
GCACGGGCTGAGGCCCCACGCAAGACTGAGAAAGAAGCCAAGACCCCCCGGGAGTTGAAGAAAGACCCCA
AACCGAGTGTCTCCCGGACCCAGCCGCGGGAGGTGCGCCGGGCAGCCTCTTCTGTGCCCAACCTCAAGAA
GACGAATGCCCAGGCGGCACCCAAGCCCCGCAAAGCGCCCAGCACGTCCCACTCTGGCTTCCCGCCGGTG
GCAAATGGACCCCGCAGCCCGCCCAGCCTCCGATGTGGAGAAGCCAGCCCCCCCAGTGCAGCCTGCGGCT
CTCCGGCCTCCCAGCTGGTGGCCACGCCCAGCCTGGAGCTGGGGCCGATCCCAGCCGGGGAGGAGAAGGC
ACTGGAGCTGCCTTTGGCCGCCAGCTCAATCCCAAGGCCACGCACACCCTCCCCTGAGTCCCACCGGAGC
CCCGCAGAGGGCAGCGAGCGGCTGTCGCTGAGCCCACTGCGGGGCGGGGAGGCCGGGCCAGACGCCTCAC
CCACAGTGACCACACCCACGGTGACCACGCCCTCACTACCCGCAGAGGTGGGCTCCCCGCACTCGACCGA
GGTGGACGAGTCCCTGTCGGTGTCCTTTGAGCAGGTGCTGCCGCCATCCGCCCCCACCAGTGAGGCTGGG
CTGAGCCTCCCGCTGCGTGGCCCCCGGGCGCGGCGCTCGGCTTCCCCACACGATGTGGACCTGTGCCTGG
TGTCACCCTGTGAATTTGAGCATCGCAAGGCGGTGCCAATGGCACCGGCACCTGCGTCCCCCGGCAGCTC
GAATGACAGCAGTGCCCGGTCACAGGAACGGGCAGGTGGGCTGGGGGCCGAGGAGACGCCACCCACATCG
GTCAGCGAGTCCCTGCCCACCCTGTCTGACTCGGATCCCGTGCCCCTGGCCCCCGGTGCGGCAGACTCAG
ACGAAGACACAGAGGGCTTTGGAGTCCCTCGCCACGACCCTTTGCCTGACCCCCTCAAGGTCCCCCCACC
ACTGCCTGACCCATCCAGCATCTGCATGGTGGACCCCGAGATGCTGCCCCCCCAAGACAGCACGGCAAACG
GAGAACGTCAGCCGCACCCGGAAGCCCCTGGCCCGCCCCAACTCACGCGCTGCCGCCCCCAAAGCCACTC
CAGTGGCTGCTGCCAAAACCAAGGGGCTTGCTGGTGGGGACCGTGCCAGCCGACCACTCAGTGCCCGGAG
TGAGCCCAGTGAGAAGGGAGGCCGGGCACCCCTGTCCAGAAAGTCCTCAACCCCCAAGACTGCCACTCGA
GGCCCGTCGGGGTCAGCCAGCAGCCGGCCCGGGGTGTCAGCCACCCCACCCAAGTCCCCGGTCTACCTGG
ACCTGGCCTACCTGCCCAGCGGGAGCAGCGCCCACCTGGTGGATGAGGAGTTCTTCCAGCGCGTGCGCGC
GCTCTGCTACGTCATCAGTGGCCAGGACCAGCGCAAGGAGGAAGGCATGCGGGCCGTCCTGGACGCGCTA
CTGGCCAGCAAGCAGCATTGGGACCGTGACCTGCAGGTGACCCTGATCCCCACTTTCGACTCGGTGGCCA
TGCATACGTGGTACGCAGAGACGCACGCCCGGCACCAGGCGCTGGGCATCACGGTGTTGGGCAGCAACAG
CATGGTGTCCATGCAGGATGACGCCTTCCCGGCTTGCAAGGTGGAGTTCTAGCCCCATCGCCGACACGCC
CCCCACTCAGCCCAGCCCGCCTGTCCCTAGATTCAGCCACATCAGAAATAAACTGTGACTACACTTGAAA

Figure 36 part - 139

AAAAAAAAAAAAAAAAAAAAAAA

Human VCY2IP1 mRNA sequence - var5 (public gi: 13938254) (SEQ ID NO: 218)

GACACCGACAGGGACTCGTCCACCTCGGTGTCCTTTGAGCAGGTGCTGCCGCCATCCGCCCCCACCAGTG
AGGCTGGGCTGAGCCTCCCGCTGCGTGGCCCCCGGGCGCGGCGCTCGGCTTCCCCACACGATGTGGACCT
GTGCCTGGTGTCACCCTGTGAATTTGAGCATCGCAAGGCGGTGCCAATGGCACCGGCACCTGCGTCCCCC
GGCAGCTCGAATGACAGCAGTGCCCGGTCACAGGAACGGGCAGGTGGGCTGGGGGCCGAGGAGACGCCAC
CCACATCGGTCAGCGAGTCCCTGCCCACCCTGTCTGACTCGGATCCCGTGCCCCTGGCCCCCGGTGCGGC
AGACTCAGACGAAGACACAGAGGGCTTTGGAGTCCCTCGCCACGACCCTTTGCCTGACCCCCTCAAGGTC
CCCCCACCACTGCCTGACCCATCCAGCATCTGCATGGTGGACCCCGAGATGCTGCCCCCCAAGACAGCAC
GGCAAACGGAGAACGTCAGCCGCACCCGGAAGCCCCTGGCCCGCCCCAACTCACGCGCTGCCGCCCCCAA
AGCCACTCCAGTGGCTGCTGCCAAAACCAAGGGGCTTGCTGGTGGGGACCGTGCCAGCCGACCACTCAGT
GCCCGGAGTGAGCCCAGTGAGAAGGGAGGCCGGGCACCCCTGTCCAGAAAGTCCTCAACCCCCAAGACTG
CCACTCGAGGCCCGTCGGGGTCAGCCAGCAGCCGGCCCGGGGTGTCAGCCACCCCACCCAAGTCCCCGGT
CTACCTGGACCTGGCCTACCTGCCCAGCGGGAGCAGCGCCCACCTGGTGGATGAGGAGTTCTTCCAGCGC
GTGCGCGCGCTCTGCTACGTCATCAGTGGCCAGGACCAGCGCAAGGAGGAAGGCATGCGGGCCGTCCTGG
ACGCGCTACTGGCCAGCAAGCAGCATTGGGACCGTGACCTGCAGGTGACCCTGATCCCCACTTTCGACTC
GGTGGCCATGCATACGTGGTACGCAGAGACGCACGCCCGGCACCAGGCGCTGGGCATCACGGTGTTGGGC
AGCAACAGCATGGTGTCCATGCAGGATGACGCCTTCCCGGCCTGCAAGGTGGAGTTCTAGCCCCATCGCC
GACACGCCCCCCACTCAGCCCAGCCCGCCTGTCCCTAGATTCAGCCACATCAGAAATAAACTGTGACTAC
ACTTAAAAAAAAAAAAAAAAAAAAAA

Human VCY2IP1 mRNA sequence - var6 (public gi: 14042428) (SEQ ID NO: 219)

AAGATGGCGGCGGTGGCTGGATCTGGGGCTGCCGCGGCTCCGAGCTCACTGCTCCTCGTGGTGGGCAGCG
AGTTCGGGAGCCCGGGGCTCCTCACCTACGTCCTGGAGGAGCTCGAAAGAGGCATCCGGTCTTGGGATGT
CGATCCTGGCGTCTGCAACCTTGATGAACAGCTCAAGGTCTTTGTGTCCCGACACTCTGCCACCTTCTCC
AGCATTGTGAAAGGCCAGCGGAGCCTGCACCACCGTGGAGACAACCTGGAGACCCTGGTCCTCCTGAACC
CATCAGACAAGTCCCTGTATGATGAGCTCCGGAACCTTCTGTTGGACCCTGCCTCTCACAAGCTACTGGT
GTTGGCTGGGCTCTGCCTGGAGGAGACGGGGGAGCTGCTGCTACAGACAGGGGGCTTCTCGCCTCACCAC
TTCCTCCAGGTCCTGAAGGACAGAGAGATCCGGGACATCCTGGCCACCACGCCCCCACCTGTGCAGCCGC
CCATACTCACCATCACCTGCCCCACCTTCGGTGACTGGGCTCAGCCGGCACCCGCTGTGCCTGGCCTTCA
GGGGGCGCTCCGGCTCCAGCTGCGGCTGAACCCCCCGGCGCAGCTGCCCAACTCTGAGGGCCTGTGCGAA
TTCCTGGAGTACGTGGCTGAGTCTCTGGAGCCACCGTCCCCCTTCGAGCTGCTGGAGCCCCCGACCTCCG
GGGGCTTCCTCAGGCTGGGCCGGCCCTGCTGCTACATCTTCCCTGGAGGCCTCGGGGATGCCGCCTTCTT
CGCCGTCAATGGCTTCACTGTGCTGGTCAACGGTGGCTCAAACCCCAAGTCCAGTTTCTGGAAGCTGGTG
CGGCACCTGGACCGCGTGGATGCCGTGCTGGTGACCCACCCTGGCGCCGACAGCCTCCCCGGCCTCAACA
GCCTGCTGCGGCGCAAACTGGCGGAGCGCTCCGAGGTGGCTGCTGGTGGGGGCTCCTGGGACGACAGGCT
GCGCAGGCTCATCTCCCCCAACCTGGGGGTCGTGTTCTTCAACGCCTGCGAGGCCGCGTCGCGGCTGGCG
CGCGGCGAGGATGAGGCGGAGCTGGCGCTGAGCCTCCTGGCGCAGCTGGGCATCACGCCTCTGCCACTCA
GCCGCGGCCCCGTGCCAGCCAAACCCACCGTGCTCTTCGAGAAGATGGGCGTGGGCCGGCTGGACATGTA
TGTGCTGCACCCGCCCTCCGCCGGCGCCGAGCGCACGCTGGCCTCTGTGTGCGCCCTGCTGGTGTGGCAC
CCCGCCGGCCCCGGCGAGAAGGTGGTGCGCGTGCTGTTCCCCGGTTGCACCCCGCCCGCCTGCCTCCTGG
ACGGCCTGGTCCGCCTGCAGCACTTGAGGTTCCTGCGAGAGCCCGTGGTGACGCCCCAGGACCTGGAGGG
GCCGGGGCGAGCCGAGAGCAAAGAGAGCGTGGGCTCCCGGGACAGCTCGAAGAGAGAGGGCCTCCTGGCC
ACCCACCCTAGACCTGGCCAGGAGCGCCCTGGGGTGGCCCGCAAGGAGCCAGCACGGGCTGAGGCCCCAC
GCAAGACTGAGAAAGAAGCCAAGACCCCCCGGGAGTTGAGGAAAGACCCCAAACCGAGTGTCTCCCGGAC
CCAGCCGCGGGAGGTGCGCCGGGCAGCCTCTTCTGTGCCCAACCTCAAGAAGACGAATGCCCAGGCGGCA
CCCAAGCCCCGCAAAGCGCCCAGCACGTCCCACTCTGGCTTCCCGCCGGTGGCAAATGGACCCCGCAGCC
CGCCCAGCCTCCGATGTGGAGAAGCCAGCCCCCCCAGTGCAGCCTGCGGCTCTCCGGCCTCCCAGCTGGT
GGCCACGCCCAGCCTGGAGCTGGGGCCGATCCCAGCCGGGGAGGAGAAGGCACTGGAGCTGCCTTTGGCC
GCCAGCTCAATCCCAAGGCCACGCACACCCTCCCCTGAGTCCCACCGGAGCCCCGCAGAGGGCAGCGAGC
GGCTGTCGCTGAGCCCACTGCGGGGCGGGGAGGCCGGGCCAGACGCCTCACCCACAGTGACCACACCCAC
GGTGACCACGCCCTCACTACCCGCAGAGGTGGGCTCCCCGCACTCGACCGAGGTGGACGAGTCCCTGTCG
GTGTCCTTTGAGCAGGTGCTGCCGCCATCCGCCCCCACCAGTGAGGCTGGGCTGAGCCTCCCGCTGCGTG
GCCCCCGGGCGCGGCGCTCGGCTTCCCCACACGATGTGGACCTGTGCCTGGTGTCACCCTGTGAATTTGA
GCATCGCAAGGCGGTGCCAATGGCACCGGCACCTGCGTCCCCCGGCAGCTCGAATGACAGCAGTGCCCGG
TCACAGGAACGGGCAGGTGGGCTGGGGGCCGAGGAGACGCCACCCACATCGGTCAGCGAGTCCCTGCCCA
CCCTGTCTGACTCGGATCCCGTGCCCCTGGCCCCCGGTGCGGCAGACTCAGACGAAGACACAGAGGGCTT
TGGAGTCCCTCGCCACGACCCTTTGCCTGACCCCCTCAAGGTCCCCCCACCACTGCCTGACCCATCCAGC
ATCTGCATGGTGGACCCCGAGATGCTGCCCCCCCAAGACAGCACGGCAAACGGAGAACGTCAGCCGCACC
CGGAAGCCCCTGGCCCGCCCCAACTCACGCGCTGCCGCCCCCAAAGCCACTCCAGTGGCTGCTGCCAAAA
CCAAGGGGCTTGCTGGTGGGGACCGTGCCAGCCGACCACTCAGTGCCCGGAGTGAGCCCAGTGAGAAGGG

Figure 36 part - 140

AGGCCGGGCACCCCTGTCCAGAAAGTCCTCAACCCCCAAGACTGCCACTCGAGGCCCGTCGGGGTCAGCC
AGCAGCCGGCCCGGGGTGTCAGCCACCCCACCCAAGTCCCCGGTCTACCTGGACCTGGCCTACCTGCCCA
GCGGGAGCAGCGCCCACCTGGTGGATGAGGAGTTCTTCCAGCGCGTGCGCGCGCTCTGCTACGTCATCAG
TGGCCAGGACCAGCGCAAGGAGGAAGGCATGCGGGCCGTCCTGGACGCGCTACTGGCCAGCAAGCAGCAT
TGGGACCGTGACCTGCAGGTGACCCTGATCCCCACTTTCGACTCGGTGGCCATGCATACGTGGTACGCAG
AGACGCACGCCCGGCACCAGGCGCTGGGCATCACGGTGTTGGGCAGCAACAGCATGGTGTCCATGCAGGA
TGACGCCTTCCCGGCCTGCAAGGTGGAGTTCTAGCCCCATCGCCGACACGCCCCCCACTCAGCCCAGCCC
GCCTGTCCCTAGATTCAGCCACATCAGAAATAAACTGTGACTACACTTG

Human VCY2IP1 mRNA sequence - var7 (public gi: 13623504) (SEQ ID NO: 220)
GGCACGAGGCCCTGTATGATGAGCTCCGGAACCTTCTGTTGGACCCTGCCTCTCACAAGCTACTGGTGTT
GGCTGGGCCCTGCCTGGAGGAGACGGGGGAGCTGCTGCTACAGACAGGGGGCTTCTCGCCTCACCACTTC
CTCCAGGTCCTGAAGGACAGAGAGATCCGGGACATCCTGGCCACCACGCCCCCACCTGTGCAGCCGCCCA
TACTCACCATCACCTGCCCCACCTTCGGTGACTGGGCTCAGCTGGCACCCGCTGTGCCTGGCCTTCAGGG
GGCGCTCCGGCTCCAGCTGCGGCTGAACCCCCCGGCGCAGCTGCCCAACTCTGAGGGCCTGTGCGAATTC
CTGGAGTACGTGGCTGAGTCTCTGGAGCCACCGTCCCCCTTCGAGCTGCTGGAGCCCCCGACCTCCGGGG
GCTTCCTCAGGCTGGGCCGGCCCTGCTGCTACATCTTCCCTGGAGGCCTCGGGGATGCCGCCTTCTTCGC
CGTCAATGGCTTCACTGTGCTGGTCAACGGTGGCTCAAACCCCAAGTCCAGTTTCTGGAAGCTGGTGCGG
CACCTGGACCGCGTGGATGCCGTGCTGGTGACCCACCCTGGCGCCGACAGCCTCCCCGGCCTCAACAGCC
TGCTGCGGCGCAAACTGGCGGAGCGCTCCGAGGTGGCTGCTGGTGGGGGCTCCTGGGACGACAGGCTGCG
CAGGCTCATCTCCCCCAACCTGGGGGTCGTGTTCTTCAACGCCTGCGAGGCCGCGTCGCGGCTGGCGCGC
GGCGAGGATGAGGCGGAGCTGGCGCTGAGCCTCCTGGCGCAGCTGGGCATCACGCCTCTGCCACTCAGCC
GCGGCCCCGTGCCAGCCAAACCCACCGTGCTCTTCGAGAAGATGGGCGTGGGCCGGCTGGACATGTATGT
GCTGCACCCGCCCTCCGCCGGCGCCGAGCGCACGCTGGCCTGTGTGTGCGCCCTGCTGGTGTGGCACCCC
GCCGGCCCCGGCGAGAAGGTGGTGCGCGTGCTGTTCCCCGGTTGCACCCCGCCCGCCTGCCTCCTGGACG
GCCTGGTCCGCCTGCAGCACTTGAGGTTCCTGCGAGAGCCCGTGGTGACGCCCCAGGACCTGGAGGGGCC
GGGGCGAGCCGAGAGCAAAGAGAGCGTGGGCTCCCGGGACAGCTCGAAGAGAGAGGGCCTCCTGGCCACC
CACCCTAGACCTGGCCAGGAGCGCCCTGGGGTGGCCCGCAAGGAGCCAGCACGGGCTGAGGCCCCACGCA
AGACTGAGAAAGAAGCCAAGACCCCCCGGGAGTTGAAGAAAGACCCCAAACCGAGTGTCTCCCGGACCCA
GCCGCGGGAGGTGCGCCGGGCAGCCTCTTCTGTGCCCAACCTCAAGAAGACGAATGCCCAGGCGGCACCC
AAGCCCCGCAAAGCGCCCAGCACGTCCCACTCTGGCTTCCCGCCGGTGGCAAATGGACCCCGCAGCCCGC
CCAGCCTCCGATGTGGAGAAGCCAGCCCCCCCAGTGCGGCCTGCGGCTCTCCGGCCTCCCAGCTGGTGGC
CACGCCCAGCCTGGAGCTGGGGCCGATCCCAGCCGGGGAGGAGAAGGCACTGGAGCTGCCTTTGGCCGCC
AGCTCAATCCCAAGGCCACGCACACCCTCCCCTGAGTCCCACCGGAGCCCCGCAGAGGGCAGCGAGCGGC
TGTCGCTGAGCCCACTGCGGGGCGGGGAGGCCGGGCCAGACGCCTCACCCACAGTGACCACACCCACGGT
GACCACGCCCTCACTACCCGCAGAGGTGGGCTCCCCGCACTCGACCGAGGTGGACGAGTCCCTGTCGGTG
TCCTTTGAGCAGGTGCTGCCGCCATCCGCCCCCACCAGTGAGGCTGGGCTGAGCCTCCCGCTGCGTGGCC
CCCGGGCGCGGCGCTCGGCTTCCCCACACGATGTGGACCTGTGCCTGGTGTCACCCTGTGAATTTGAGCA
TCGCAAGGCGGTGCCAATGGCACCGGCACCTGCGTCCCCCGGCAGCTCGAATGACAGCAGTGCCCGGTCA
CAGGAACGGGCAGGTGGGCTGGGGGCCGAGGAGACGCCACCCACATCGGTCAGCGAGTCCCTGCCCACCC
TGTCTGACTCGGATCCCGTGCCCCTGGCCCCCGGTGCGGCAGACTCAGACGAAGACACAGAGGGCTTTGG
AGTCCCTCGCCACGACCCTTTGCCTGACCCCCTCAAGGTCCCCCCACCACTGCCTGACCCATCCAGCATC
TGCATGGTGGACCCCGAGATGCTGCCCCCCAAGACAGCACGGCAAACGGAGAACGTCAGCCGCACCCGGA
AGCCCCTGGCCCGCCCCAACTCACGCGCTGCCGCCCCCAAAGCCACTCCAGTGGCTGCTGCCAAAACCAA
GGGGCTTGCTGGTGGGGACCGTGCCAGCCGACCACTCAGTGCCCGGAGTGAGCCCAGTGAGAAGGGAGGC
CGGGCACCCCTGTCCAGAAAGTCCTCAACCCCCAAGACTGCCACTCGAGGCCCGTCGGGGTCAGCCAGCA
GCCGGCCCGGGGTGTCAGCCACCCCACCCAAGTCCCCGGTCTACCTGGACCTGGCCTACCTGCCCAGCGG
GAGCAGCGCCCACCTGGTGGATGAGGAGTTCTTCCAGCGCGTGCGCGCGCTCTGCTACGTCATCAGTGGC
CAGGACCAGCGCAAGGAGGAAGGCATGCGGGCCGTCCTGGACGCGCTACTGGCCAGCAAGCAGCATTGGG
ACCGTGACCTGCAGGTGACCCTGATCCCCACTTTCGACTCGGTGGCCATGCATACGTGGTACGCAGAGAC
GCACGCCCGGCACCAGGCGCTGGGCATCACGGTGTTGGGCAGCAACAGCATGGTGTCCATGCAGGATGAC
GCCTTCCCGGCCTGCAAGGTGGAGTTCTAGCCCCATCGCCGACACGCCCCCCACTCAGCCCAGCCCGCCT
GTCCCTAGATTCAGCCACATCAGAAATAAACTGTGACTACACTTGAAAAAAAAAAAAAAAAAA

Human VCY2IP1 mRNA sequence - var8 (public gi: 10434893) (SEQ ID NO: 221)
GAACCCCAAGTCCAGTTTCTGGAAGCTGGTGCGGCACCTGGACCGCGTGGATGCCGTGCTGGTGACCCAC
CCTGGCGCCGACAGCCTCCCCGGCCTCAACAGCCTGCTGCGGCGCAAACTGGCGGAGCGCTCCGAGGTGG
CTGCTGGTGGGGGCTCCTGGGACGACAGGCTGCGCAGGCTCATCTCCCCCAACCTGGGGGTCGTGTTCTT
CAACGCCTGCGAGGCCGCGTCGCGGCTGGCGCGCGGCGAGGATGAGGCGGAGCTGGCGCTGAGCCTCCTG
GCGCAGCTGGGCATCACGCCTCTGCCACTCAGCCGCGGCCCCGTGCCAGCCAAACCCACCGTGCTCTTCG
AGAAGATGGGCGTGGGCCGGCTGGACATGTATGTGCTGCACCCGCCCTCCGCCGGCGCCGAGCGCACGCT
GGCCTCTGTGTGCGCCCTGCTGGTGTGGCACCCCGCCGGCCCCGGCGAGAAGGTGGTGCGCGTGCTGTTC

Figure 36 part - 141

CCCGGTTGCACCCCGCCCGCCTGCCTCCTGGACGGCCTGGTCCGCCTGCAGCACTTGAGGTTCCTGCGAG
AGCCCGTGGTGACGCCCCAGGACCTGGAGGGGCCGGGGCGAGCCGAGAGCAAAGAGAGCGTGGGCTCCCG
GGACAGCTCGAAGAGAGAGGGCCTCCTGGCCACCCACCCTAGACCTGGCCAGGAGCGCCCTGGGGTGGCC
CGCAAGGAGCCAGCACGGGCTGAGGCCCCACGCAAGACTGAGAAAGAAGCCAAGACCCCCCGGGAGTTGA
AGAAAGACCCCAAACCGAGTGTCTCCCGGACCCAGCCGCGGGAGGTGCGCCGGGCAGCCTCTTCTGTGCC
CAACCTCAAGAAGACGAATGCCCAGGCGGCACCCAAGCCCCGCAAAGCGCCCAGCACGTCCCACTCTGGC
TTCCCGCCGGTGGCAAATGGACCCCGCAGCCCGCCCAGCCTCCGATGTGGAGAAGCCAGCCCCCCCAGTG
CAGCCTGCGGCTCTCCGGCCTCCCAGCTGGTGGCCACGCCCAGCCTGGAGCTGGGGCCGATCCCAGCCGG
GGAGGAGAAGGCACTGGAGCTGCCTTTGGCCGCCAGCTCAATCCCAAGGCCACGCACACCCTCCCCTGAG
TCCCACCGGAGCCCCGCAGAGGGCAGCGAGCGGCTGTCGCTGAGCCCACTGCGGGGCGGGGAGGCCGGGC
CAGACGCCTCACCCACAGTGACCACACCCACGGTGACCACGCCCTCACTACCCGCAGAGGTGGGCTCCCC
GCACTCGACCGAGGTGGACGAGTCCCTGTCGGTGTCCTTTGAGCAGGTGCTGCCGCCATCCGCCCCCACC
AGTGAGGCTGGGCTGAGCCTCCCGCTGCGTGGCCCCCGGGCGCGGCGCTCGGCTTCCCCACACGATGTGG
ACCTGTGCCTGGTGTCACCCTGTGAATTTGAGCATCGCAAGGCGGTGCCAATGGCACCGGCACCTGCGTC
CCCCGGCAGCTCGAATGACAGCAGTGCCCGGTCACAGGAACGGGCAGGTGGGCTGGGGGCCGAGGAGACG
CCACCCACATCGGTCAGCGAGTCCCTGCCCACCCTGTCTGACTCGGATCCCGTGCCCCTGGCCCCCGGTG
CGGCAGACTCAGACGAAGACACAGAGGGCTTTGGAGTCCCTCGCCACGACCCTTTGCCTGACCCCCTCAA
GGTCCCCCCCACCACTGCCTGACCCATCCAGCATCTGCATGGTGGACCCCGAGATGCTGCCCCCCAAGACA
GCACGGCAAACGGAGAACGTCAGCCGCACCCGGAAGCCCCTGGCCCGCCCCAACTCACGCGCTGCCGCCC
CCAAAGCCACTCCAGTGGCTGCTGCCAAAACCAAGGGGCTTGCTGGTGGGGACCGTGCCAGCCGACCACT
CAGTGCCCGGAGTGAGCCCAGTGAGAAGGGAGGCCGGGCACCCCTGTCCAGAAAGTCCTCAACCCCCAAG
ACTGCCACTCGAGGCCCGTCGGGGTCAGCCAGCAGCCGGCCCGGGGTGTCAGCCACCCCACCCAAGTCCC
CGGTCTACCTGGACCTGGCCTACCTGCCCAGCGGGAGCAGCGCCCACCTGGTGGATGAGGAGCTCTTCCA
GCGCGTGCGCGCGCTCTGCTACGTCATCAGTGGCCAGGACCAGCGCAAGGAGGAAGGCATGCGGGCCGTC
CTGGACGCGCTACTGGCCAGCAAGCAGCATTGGGACCGTGACCTGCAGGTGACCCTGATCCCCACTTTCG
ACTCGGTGGCCATGCATACGTGGTACGCAGAGACGCACGCCCGGCACCAGGCGCTGGGCATCACGGTGTT
GGGCAGCAACAGCATGGTGTCCATGCAGGATGACGCCTTCCCGGCTTGCAAGGTGGAGTTCTAGCCCCAT
CGCCGACACGCCCCCCACTCAGCCCAGCCCGCCTGTCCCTAGATTCAGCCACATCAGAAATAAACTGTGA
CTAC

Human VCY2IP1 mRNA sequence - var9 (public gi: 7022843) (SEQ ID NO: 222)

CATCTCCCCCAACCTGGGGGTCGTGTTCTTCAACGCCTGCGAGGCCGCGTCGCGGCTGGCGCGCGGCGAG
GATGAGGCGGAGCTGGCGCTGAGCCTCCTGGCGCAGCTGGGCATCACGCCTCTGCCACTCAGCCGCGGCC
CCGTGCCAGCCAAACCCACCGTGCTCTTCGAGAAGATGGGCGTGGGCCGGCTGGACATGTATGTGCTGCA
CCCGCCCTCCGCCGGCGCCGAGCGCACGCTGGCCTCTGTGTGCGCCCTGCTGGTGTGGCACCCCGCCGGC
CCCGGCGAGAAGGTGGTGCGCGTGCTGTTCCCCGGTTGCACCCCGCCCGCCTGCCTCCTGGACGGCCTGG
TCCGCCTGCAGCACTTGAGGTTCCTGCGAGAGCCCGTGGTGACGCCCCAGGACCTGGAGGGGCCGGGGCG
AGCCGAGAGCAAAGAGAGCGTGGGCTCCCGGGACAGCTCGAAGAGAGAGGGCCTCCTGGCCACCCACCCT
AGACCTGGCCAGGAGCGCCCTGGGGTGGCCCGCAAGGAGCCAGCACGGGCTGAGGCCCCACGCAAGACTG
AGAAAGAAGCCAAGACCCCCCGGGAGTTGAAGAAAGACCCCAAACCGAGTGTCTCCCGGACCCAGCCGCG
GGAGGTGCGCCGGGCAGCCTCTTCTGTGCCCAACCTCAAGAAGACGAATGCCCAGGCGGCACCCAAGCCC
CGCAAAGCGCCCAGCACGTCCCACTCTGGCTTCCCGCCGGTGGCAAATGGACCCCGCAGCCCGCCCAGCC
TCCGATGTGGAGAAGCCAGCCCCCCCAGTGCAGCCTGCGGCTCTCCGGCCTCCCAGCTGGTGGCCACGCC
CAGCCTGGAGCTGGGGCCGATCCCAGCCGGGGAGGAGAAGGCACTGGAGCTGCCTTTGGCCGCCAGCTCA
ATCCCAAGGCCACGCACACCCTCCCCTGAGTCCCACCGGAGCCCCGCAGAGGGCAGCGAGCGGCTGTCGC
TGAGCCCACTGCGGGGCGGGGAGGCCGGGCCAGACGCCTCACCCACAGTGACCACACCCACGGTGACCAC
GCCCTCACTACCCGCAGAGGTGGGCTCCCCGCACTCGACCGAGGTGGACGAGTCCCTGTCGGTGTCCTTT
GAGCAGGTGCTGCCGCCATCCGCCCCCACCAGTGAGGCTGGGCTGAGCCTCCCGCTGCGTGGCCCCCGGG
CGCGGCGCTCGGCTTCCCCACACGATGTGGACCTGTGCCTGGTGTCACCCTGTGAATTTGAGCATCGCAA
GGCGGTGCCAATGGCACCGGCACCTGCGTCCCCCGGCAGCTCGAATGACAGCAGTGCCCGGTCACAGGAA
CGGGCAGGTGGGCTGGGGGCCGAGGAGACGCCACCCACATCGGTCAGCGAGTCCCTGCCCACCCTGTCTG
ACTCGGATCCCGTGCCCCTGGCCCCCGGTGCGGCAGACTCAGACGAAGACACAGAGGGCTTTGGAGTCCC
TCGCCACGACCCTTTGCCTGACCCCCTCAAGGTCCCCCCACCACTGCCTGACCCATCCAGCATCTGCATG
GTGGACCCCGAGATGCTGCCCCCCAAGACAGCACGGCAAACGGAGAACGTCAGCCGCACCCGGAAGCCCC
TGGCCCGCCCCAACTCACGCGCTGCCGCCCCCAAAGCCACTCCAGTGGCTGCTGCCAAAACCAAGGGGCT
TGCTGGTGGGGACCGTGCCAGCCGACCACTCAGTGCCCGGAGTGAGCCCAGTGAGAAGGGAGGCCGGGCA
CCCCTGTCCAGAAAGTCCTCAACCCCCAAGACTGCCACTCGAGGCCCGTCGGGGTCAGCCAGCAGCCGGC
CCGGGGTGTCAGCCACCCCACCCAAGTCCCCGGTCTACCTGGACCTGGCCTACCTGCCCAGCGGGAGCAG
CGCCCACCTGGTGGATGAGGAGTTCTTCCAGCGCGTGCGCGCGCTCTGCTACGTCATCAGTGGCCAGGAC
CAGCGCAAGGAGGAAGGCATGCGGGCCGTCCTGGACGCGCTACTGGCCAGCAAGCAGCATTGGGACCGTG
ACCTGCAGGTGACCCTGATCCCCACTTTCGACTCGGTGGCCATGCATACGTGGTACGCAGAGACGCACGC
CCGGCACCAGGCGCTGGGCATCACGGTGTTGGGCAGCAACGGCATGGTGTCCATGCAGGATGACGCCTTC
CCGGCCTGCAAGGTGGAGTTCTAGCCCCATCGCCGACACGCCCCCCACTCAGCCCAGCCCGCCTGTCCCT

Figure 36 part - 142

AGATTCAGCCACATCAGAAATAAACTGTGACTACACTTG

Human VCY2IP1 Protein sequence - var1 (public gi: 22002953) (SEQ ID NO: 315)
MAAVAGSGAAAAPSSLLLVVGSEFGSPGLLTYVLEELERGIRSWDVDPGVCNLDEQLKVFVSRHSATFSS
IVKGQRSLHHRGDNLETLVLLNPSDKSLYDELRNLLLDPASHKLLVLAGLCLEETGELLLQTGGFSPHHF
LQVLKDREIRDILATTPPPVQPPILTITCPTFGDWAQPAPAVPGLQGALRLQLRLNPPAQLPNSEGLCEF
LEYVAESLEPPSPFELLEPPTSGGFLRLGRPCCYIFPGGLGDAAFFAVNGFTVLVNGGSNPKSSFWKLVR
HLDRVDAVLVTHPGADSLPGLNSLLRRKLAERSEVAAGGGSWDDRLRRLISPNLGVVFFNACEAASRLAR
GEDEAELALSLLAQLGITPLPLSRGPVPAKPTVLFEKMGVGRLDMYVLHPPSAGAERTLASVCALLVWHP
AGPGEKVVRVLFPGCTPPACLLDGLVRLQHLRFLREPVVTPQDLEGPGRAESKESVGSRDSSKREGLLAT
HPRPGQERPGVARKEPARAEAPRKTEKEAKTPRELRKDPKPSVSRTQPREVRRAASSVPNLKKTNAQAAP
KPRKAPSTSHSGFPPVANGPRSPPSLRCGEASPPSAACGSPASQLVATPSLELGPIPAGEEKALELPLAA
SSIPRPRTPSPESHRSPAEGSERLSLSPLRGGEAGPDASPTVTTPTVTTPSLPAEVGSPHSTEVDESLSV
SFEQVLPPSAPTSEAGLSLPLRGPRARRSASPHDVDLCLVSPCEFEHRKAVPMAPAPASPGSSNDSSARS
QERAGGLGAEETPPTSVSESLPTLSDSDPVPLAPGAADSDEDTEGFGVPRHDPLPDPLKVPPPLPDPSSI
CMVDPEMLPPKTARQTENVSRTRKPLARPNSRAAAPKATPVAAAKTKGLAGGDRASRPLSARSEPSEKGG
RAPLSRKSSTPKTATRGPSGSASSRPGVSATPPKSPVYLDLAYLPSGSSAHLVDEEFFQRVRALCYVISG
QDQRKEEGMRAVLDALLASKQHWDRDLQVTLIPTFDSVAMHTWYAETHARHQALGITVLGSNSMVSMQDD
AFPACKVEF

Human VCY2IP1 Protein sequence - var2 (public gi: 21739763) (SEQ ID NO: 316)
PKMAAVAGSGAAAAPSSLLLVVGSEFGSPGLLTYVLEELERGIRSWDVDPGVCNLDEQLKVFVSRHSATF
SSIVKGQRSLHHRGDNLETLVLLNPSDKSLYDELRNLLLDPASHKLLVLAGPCLEETGELLLQTGGFSPH
HFLQVLKDREIRDILATTPPPVQPPILTITCPTFGDWAQLAPAVPGLQGALRLQLRLNPPAQLPNSEGLC
EFLEYVAESLEPPSPFELLEPPTSGGFLRLGRPCCYIFPGGLGDAAFFAVNGFTVLVNGGSNPKSSFWKL
VRHLDRVDAVLVTHPGADSLPGLNSLLRRKLAERSEVAAGGGSWDDRLRRLISPNLGVVFFNACEAASRL
ARGEDEAELALSLLAQLGITPLPLSRGPVPAKPTVLFEKMGVGRLDMYVLHPPSAGAERTLASVCALLVW
HPAGPGEKVVRVLFPGCTPPAYLLDGLVRLQHLRFLREPVVTPQDLEGPGRAESKESVGSRDSSKREGLL
ATHPRPGQERPGVARKEPARAEAPRKTEKEAKTPRELKKDPKPSVSRTQPREVRRAASSVPNLKKTNAQA
APKPRKAPSTSHSGFPPVANGPRSPPSLRCGEASPPSAACGSPASQLVATPSLELGPIPAGEEKALELPL
AASSIPRPRTPSPESHRSPAEGSERLSLSPLRGGEAGPDASPTVTTPTVTTPSLPAEVGSPHSTEVDESL
SVSFEQVLPPSAPTSEAGLSLPLRGPRARRSASPHDVDLCLVSPCEFEHRKAVPMAPAPASPGSSNDSSA
RSQERAGGLGAEETPPTSVSESLPTLSDSDPVPLAPGAADSDEDTEGFGVPRHDPLPDPLKVPPPLPDPS
SICMVDPEMLPPKTARQTENVSRTRKPLARPNSRAAAPKATPVAAAKTKGLAGGDRASRPLSARSEPSEK
GGRAPLSRKSSTPKTATRGPSGSASSRPGVSATPPKSPVYLDLAYLPSGSSAHLVDEEFFQRVRALCYVI
SGQDQRKEEGMRAVLDALLASKQHWDRDLQVTLIPTFDSVAMHTWYAETHARHQALGITVLGSNSMVSMQ
DDAFPACKVEF

Human VCY2IP1 Protein sequence - var3 (public gi: 21104446) (SEQ ID NO: 317)
MGVGRLDMYVLHPPSAGAERTLASVCALLVWHPAGPGEKVVRVLFPGCTPPACLLDGLVRLQHLRFLREP
VVTPQDLEGPGRAESKESVGSRDSSKREGLLATHPRPGQERPGVARKEPARAEAPRKTEKEAKAPRELKK
DPKPSVSRTQPREVRRAASSVPNLKKTNAQAAPKPRKAPSTSHSGFPPVANGPRSPPSLRCGEASPPSAA
CGSPASQLVATPSLELGPIPAGEEKALELPLAASSIPRPRTPSPESHRSPAEGSERLSLSPLRGGEAGPD
ASPTVTTPTVTTPSLPAEVGSPHSTEVDESLSVSFEQVLPPSAPTSEAGLSLPLRGPRARRSASPHDVDL
CLVSPCEFEHRKAVPMAPAPASPGSSNDSSARSQERAGGLGAEETPPTSVSESLPTLSDSDPVPLAPGAA
DSDEDTEGFGVPRHDPLPDPLKVPPPLPDPSSICMVDPEMLPPKTARQTENVSRTRKPLARPNSRAAAPK
ATPVAAAKTKGLAGGDRASRPLSARSEPSEKGGRAPLSRKSSTPKTATRGPSGSASSRPGVSATPPKSPV
YLDLAYLPSGSSAHLVDEEFFQRVRALCYVISGQDQRKEEGMRAVLDALLASKQHWDRDLQVTLIPTFDS
VAMHTWYAETHARHQALGITVLGSNSMVSMQDDAFPACKVEF

Human VCY2IP1 Protein sequence - var4 (public gi: 14250680) (SEQ ID NO: 318)
MGVGRLDMYVLHPPSAGAERTLASVCALLVWHPAGPGEKVVRVLFPGCTPPACLLDGLVRLQHLRFLREP
VVTPQDLEGPGRAESKESVGSRDSSKREGLLATHPRPGQERPGVARKEPARAEAPRKTEKEAKTPRELKK
DPKPSVSRTQPREVRRAASSVPNLKKTNAQAAPKPRKAPSTSHSGFPPVANGPRSPPSLRCGEASPPSAA
CGSPASQLVATPSLELGPIPAGEEKALELPLAASSIPRPRTPSPESHRSPAEGSERLSLSPLRGGEAGPD
ASPTVTTPTVTTPSLPAEVGSPHSTEVDESLSVSFEQVLPPSAPTSEAGLSLPLRGPRARRSASPHDVDL
CLVSPCEFEHRKAVPMAPAPASPGSSNDSSARSQERAGGLGAEETPPTSVSESLPTLSDSDPVPLAPGAA
DSDEDTEGFGVPRHDPLPDPLKVPPPLPDPSSICMVDPEMLPPKTARQTENVSRTRKPLARPNSRAAAPK
ATPVAAAKTKGLAGGDRASRPLSARSEPSEKGGRAPLSRKSSTPKTATRGPSGSASSRPGVSATPPKSPV
YLDLAYLPSGSSAHLVDEEFFQRVRALCYVISGQDQRKEEGMRAVLDALLASKQHWDRDLQVTLIPTFDS
VAMHTWYAETHARHQALGITVLGSNSMVSMQDDAFPACKVEF

Figure 36 part - 143

Human VCY2IP1 Protein sequence - var5 (public gi: 13938255) (SEQ ID NO: 319)
DTDRDSSTSVSFEQVLPPSAPTSEAGLSLPLRGPRARRSASPHDVDLCLVSPCEFEHRKAVPMAPAPASP
GSSNDSSARSQERAGGLGAEETPPTSVSESLPTLSDSDPVPLAPGAADSDEDTEGFGVPRHDPLPDPLKV
PPPLPDPSSICMVDPEMLPPKTARQTENVSRTRKPLARPNSRAAAPKATPVAAAKTKGLAGGDRASRPLS
ARSEPSEKGGRAPLSRKSSTPKTATRGPSGSASSRPGVSATPPKSPVYLDLAYLPSGSSAHLVDEEFFQR
VRALCYVISGQDQRKEEGMRAVLDALLASKQHWDRDLQVTLIPTFDSVAMHTWYAETHARHQALGITVLG
SNSMVSMQDDAFPACKVEF

Human VCY2IP1 Protein sequence - var6 (public gi: 14042429) (SEQ ID NO: 320)
MAAVAGSGAAAAPSSLLLVVGSEFGSPGLLTYVLEELERGIRSWDVDPGVCNLDEQLKVFVSRHSATFSS
IVKGQRSLHHRGDNLETLVLLNPSDKSLYDELRNLLLDPASHKLLVLAGLCLEETGELLLQTGGFSPHHF
LQVLKDREIRDILATTPPPVQPPILTITCPTFGDWAQPAPAVPGLQGALRLQLRLNPPAQLPNSEGLCEF
LEYVAESLEPPSPFELLEPPTSGGFLRLGRPCCYIFPGGLGDAAFFAVNGFTVLVNGGSNPKSSFWKLVR
HLDRVDAVLVTHPGADSLPGLNSLLRRKLAERSEVAAGGGSWDDRLRRLISPNLGVVFFNACEAASRLAR
GEDEAELALSLLAQLGITPLPLSRGPVPAKPTVLFEKMGVGRLDMYVLHPPSAGAERTLASVCALLVWHP
AGPGEKVVRVLFPGCTPPACLLDGLVRLQHLRFLREPVVTPQDLEGPGRAESKESVGSRDSSKREGLLAT
HPRPGQERPGVARKEPARAEAPRKTEKEAKTPRELRKDPKPSVSRTQPREVRRAASSVPNLKKTNAQAAP
KPRKAPSTSHSGFPPVANGPRSPPSLRCGEASPPSAACGSPASQLVATPSLELGPIPAGEEKALELPLAA
SSIPRPRTPSPESHRSPAEGSERLSLSPLRGGEAGPDASPTVTTPTVTTPSLPAEVGSPHSTEVDESLSV
SFEQVLPPSAPTSEAGLSLPLRGPRARRSASPHDVDLCLVSPCEFEHRKAVPMAPAPASPGSSNDSSARS
QERAGGLGAEETPPTSVSESLPTLSDSDPVPLAPGAADSDEDTEGFGVPRHDPLPDPLKVPPPLPDPSSI
CMVDPEMLPPQDSTANGERQPHPEAPGPPQLTRCRPQSHSSGCCQNQGACWWGPCQPTTQCPE

Human VCY2IP1 Protein sequence - var7 (public gi: 13623505) (SEQ ID NO: 321)
MGVGRLDMYVLHPPSAGAERTLACVCALLVWHPAGPGEKVVRVLFPGCTPPACLLDGLVRLQHLRFLREP
VVTPQDLEGPGRAESKESVGSRDSSKREGLLATHPRPGQERPGVARKEPARAEAPRKTEKEAKTPRELKK
DPKPSVSRTQPREVRRAASSVPNLKKTNAQAAPKPRKAPSTSHSGFPPVANGPRSPPSLRCGEASPPSAA
CGSPASQLVATPSLELGPIPAGEEKALELPLAASSIPRPRTPSPESHRSPAEGSERLSLSPLRGGEAGPD
ASPTVTTPTVTTPSLPAEVGSPHSTEVDESLSVSFEQVLPPSAPTSEAGLSLPLRGPRARRSASPHDVDL
CLVSPCEFEHRKAVPMAPAPASPGSSNDSSARSQERAGGLGAEETPPTSVSESLPTLSDSDPVPLAPGAA
DSDEDTEGFGVPRHDPLPDPLKVPPPLPDPSSICMVDPEMLPPKTARQTENVSRTRKPLARPNSRAAAPK
ATPVAAAKTKGLAGGDRASRPLSARSEPSEKGGRAPLSRKSSTPKTATRGPSGSASSRPGVSATPPKSPV
YLDLAYLPSGSSAHLVDEEFFQRVRALCYVISGQDQRKEEGMRAVLDALLASKQHWDRDLQVTLIPTFDS
VAMHTWYAETHARHQALGITVLGSNSMVSMQDDAFPACKVEF

Human VCY2IP1 Protein sequence - var8 (public gi: 10434894) (SEQ ID NO: 322)
MGVGRLDMYVLHPPSAGAERTLASVCALLVWHPAGPGEKVVRVLFPGCTPPACLLDGLVRLQHLRFLREP
VVTPQDLEGPGRAESKESVGSRDSSKREGLLATHPRPGQERPGVARKEPARAEAPRKTEKEAKTPRELKK
DPKPSVSRTQPREVRRAASSVPNLKKTNAQAAPKPRKAPSTSHSGFPPVANGPRSPPSLRCGEASPPSAA
CGSPASQLVATPSLELGPIPAGEEKALELPLAASSIPRPRTPSPESHRSPAEGSERLSLSPLRGGEAGPD
ASPTVTTPTVTTPSLPAEVGSPHSTEVDESLSVSFEQVLPPSAPTSEAGLSLPLRGPRARRSASPHDVDL
CLVSPCEFEHRKAVPMAPAPASPGSSNDSSARSQERAGGLGAEETPPTSVSESLPTLSDSDPVPLAPGAA
DSDEDTEGFGVPRHDPLPDPLKVPPPLPDPSSICMVDPEMLPPKTARQTENVSRTRKPLARPNSRAAAPK
ATPVAAAKTKGLAGGDRASRPLSARSEPSEKGGRAPLSRKSSTPKTATRGPSGSASSRPGVSATPPKSPV
YLDLAYLPSGSSAHLVDEELFQRVRALCYVISGQDQRKEEGMRAVLDALLASKQHWDRDLQVTLIPTFDS
VAMHTWYAETHARHQALGITVLGSNSMVSMQDDAFPACKVEF

Human VCY2IP1 Protein sequence - var9 (public gi: 7022844) (SEQ ID NO: 323)
MGVGRLDMYVLHPPSAGAERTLASVCALLVWHPAGPGEKVVRVLFPGCTPPACLLDGLVRLQHLRFLREP
VVTPQDLEGPGRAESKESVGSRDSSKREGLLATHPRPGQERPGVARKEPARAEAPRKTEKEAKTPRELKK
DPKPSVSRTQPREVRRAASSVPNLKKTNAQAAPKPRKAPSTSHSGFPPVANGPRSPPSLRCGEASPPSAA
CGSPASQLVATPSLELGPIPAGEEKALELPLAASSIPRPRTPSPESHRSPAEGSERLSLSPLRGGEAGPD
ASPTVTTPTVTTPSLPAEVGSPHSTEVDESLSVSFEQVLPPSAPTSEAGLSLPLRGPRARRSASPHDVDL
CLVSPCEFEHRKAVPMAPAPASPGSSNDSSARSQERAGGLGAEETPPTSVSESLPTLSDSDPVPLAPGAA
DSDEDTEGFGVPRHDPLPDPLKVPPPLPDPSSICMVDPEMLPPKTARQTENVSRTRKPLARPNSRAAAPK
ATPVAAAKTKGLAGGDRASRPLSARSEPSEKGGRAPLSRKSSTPKTATRGPSGSASSRPGVSATPPKSPV
YLDLAYLPSGSSAHLVDEEFFQRVRALCYVISGQDQRKEEGMRAVLDALLASKQHWDRDLQVTLIPTFDS
VAMHTWYAETHARHQALGITVLGSNGMVSMQDDAFPACKVEF

Figure 36 part - 144

Unigene Name: SPG20 Unigene ID: Hs.118087

Human SPG20 mRNA sequence - var1 (public gi: 28436884) (SEQ ID NO: 367)

AGTGTAAGGGAGTGGGAGCTGGTCCGTGCCGCGGCGGCCGCGCAGGGAGCTCTCGAGGCAACGCCGGGGC
GCCCGAGGTCTGGAAGGCGCAGAAATGGAGCAAGAGCCACAAAATGGAGAACCTGCTGAAATTAAGATCA
TCAGAGAAGCATATAAGAAGGCCTTTTTATTTGTTAACAAAGGTCTGAATACAGATGAATTAGGTCAGAA
GGAAGAAGCAAAGAACTACTATAAGCAAGGAATAGGACACCTGCTCAGAGGGATCAGCATTTCATCAAAA
GAGTCTGAACACACAGGTACTGGGTGGGAATCTGCTAGACAGATGCAACAGAAAATGAAAGAAACTCTAC
AGAATGTACGCACCAGGCTGGAAATTCTAGAGAAGGGTCTTGCCACTTCTCTGCAGAATGATCTTCAGGA
GGTGCCCAAGTTATATCCAGAATTTCCACCTAAAGACATGTGTGAAAAATTACCAGAGCCTCAGTCTTTT
AGTTCAGCTCCTCAGCATGCTGAAGTAAATGGAAACACCTCAACTCCAAGTGCAGGGGCAGTTGCTGCAC
CTGCTTCTCTGTCTTTACCATCACAAAGTTGTCCAGCAGAAGCTCCTCCTGCTTATACTCCTCAAGCTGC
TGAAGGTCACTACACTGTATCCTATGGAACAGATTCTGGGGAGTTTTCATCAGTTGGAGAGGAGTTTTAT
AGGAATCATTCTCAGCCACCGCCTCTTGAGACCTTAGGGCTGGATGCAGATGAATTGATTTTGATACCAA
ATGGAGTACAGATTTTTTTTGTAAATCCTGCAGGGGAGGTTAGTGCACCTTCGTATCCTGGGTACCTTCG
AATTGTGAGGTTTTTGGATAATTCTCTCGATACGGTTCTAAACCGTCCTCCCGGGTTTCTTCAGGTTTGT
GACTGGTTATATCCTCTAGTTCCTGATAGATCTCCGGTTCTGAAATGTACTGCGGGAGCCTACATGTTTC
CTGATACAATGCTACAAGCAGCAGGATGCTTTGTGGGGGTCGTCCTGTCCTCTGAGTTACCAGAGGATGA
TAGAGAGCTCTTTGAGGATCTGTTAAGGCAAATGTCTGACCTTCGGCTCCAGGCCAACTGGAACAGAGCA
GAAGAAGAAAATGAATTCCAAATCCCTGGAAGAACTAGACCCTCCTCTGACCAACTAAAAGAAGCCTCTG
GCACTGATGTGAAACAGTTGGACCAAGGCAATAAGGATGTACGTCATAAAGGAAAACGTGGAAAAAGGGC
TAAAGATACTTCAAGTGAAGAAGTTAACCTGAGTCACATTGTACCATGTGAGCCAGTTCCAGAAGAAAAG
CCAAAAGAATTACATGAATGGAGTGAAAAAGTGGCTCACAACATTTTGTCAGGTGCTTCCTGGGTGAGTT
GGGGTTTAGTCAAAGGTGCTGAGATTACTGGTAAGGCAATCCAGAAAGGTGCTTCTAAACTCCGAGAGCG
GATTCAACCAGAAGAAAAACCCGTGGAAGTTAGTCCAGCTGTCACCAAGGGACTTTATATAGCGAAGCAA
GCTACAGGAGGAGCAGCAAAAGTCAGTCAGTTCCTGGTTGATGGAGTTTGCACTGTAGCAAATTGCGTTG
GAAAAGAACTAGCTCCACATGTCAAGAAGCATGGAAGCAAACTTGTTCCAGAATCTCTTAAAAAAGACAA
AGATGGGAAATCTCCTCTGGATGGTGCTATGGTTGTAGCAGCGAGTAGTGTTCAAGGATTTTCAACTGTC
TGGCAAGGATTGGAATGTGCAGCTAAATGCATCGTTAACAATGTTTCAGCAGAAACTGTACAAACTGTCA
GATACAAATACGGATATAATGCAGGAGAAGCTACCCACCATGCGGTGGATTCTGCGGTCAATGTTGGCGT
AACTGCCTACAATATTAACAACATTGGTATCAAAGCAATGGTGAAGAAAACTGCAACACAAACAGGACAC
ACTCTCCTTGAGGACTATCAGATAGTTGATAATTCTCAGAGGGAAAATCAAGAAGGAGCAGCAAATGTCA
ACGTGAGAGGGGAGAAGGATGAGCAGACGAAGGAAGTAAAGGAGGCAAAGAAGAAAGATAAATGATGAAG
TGCTGGGAATCACTTATACCAAAGCCTTATGAAATGGATGAAATTTTGTTAAATAGGCAAATGTGGAATT
CCTCACAGATTAACCAGTATTTTTTAAATGTATTCATTCCTACAAATTAACTTTCATAAATTTTATGGCA
TGTCTTCTATTTAAAAGGAAAAGAATAAGTATTCTTGCATCTGGCCTTAGAAATGTGAAGTTATATTCTC
AAGTTTATTTTTTTCCAAGTGTAGCTAAAATATTTTTGCAGGTAAAATAAAGCTGATAGTACATGTGTTG
TTCAAACCTTGTTAAACCTAATATTGAACTATTTTTATATCTGCTGTCTTTCAGAAGGCAAATAGGAAAC
TATATATTTGCTTAAAAATTGGCATTTAGTAACCTTAATTCTTTTTATAGAAGGAATGACTTAAAGTATT
GTCCCCTCTTTTTGCACTAATTGTGGATTTTTTTAGATGCTTCTCAAAATTTTCAGTGTGTAAGCTAAAC
AAAAACTAAAACTAAGAATTCTCAAAAAGACTTGTTCAAAACAGGGAAAGACTGATGAAAAGTAAAATGG
ACTACTTTTGTAACTTACCTGTTTGTTAGGAAATGGAATGGTTTCTTTGATTTAAAATGAATAAAAATAG
ATTATTACGTCTTTTGTATTGAGACTGTATTGTTATGAGCCTAGGAAATTTGGGAACATGATTGTATTGT
ATTAAAATTCGAAGTGATTATTATCAGCTTAATTGGATTAAAAAAGTACTTCAAGAAATTAAAAAAAAAA
AAAAAAAAAAAATAAAAAAAAAAAAAAA

Human SPG20 mRNA sequence - var2 (public gi: 7023530) (SEQ ID NO: 368)

AGGGAGCTCTCGAGGCAACGCCGGGGCGCCCGAGGTCTGGAAGGCGCAGAAATGGAGCAAGAGCCACAAA
ATGGAGAACCTGCTGAAATTAAGATCATCAGAGAAGCATATAAGAAGGCCTTTTTATTTGTTAACAAAGG
TCTGAATACAGATGAATTAGGTCAGAAGGAAGAAGCAAAGAACTACTATAAGCAAGGAATAGGACACCTG
CTCAGAGGGATCAGCATTTCATCAAAAGAGTCTGAACACACAGGTCCTGGGTGGGAATCTGCTAGACAGA
TGCAACAGAAAATGAAAGAAACTCTACAGAATGTACGCACCAGGCTGGAAATTCTAGAGAAGGGTCTTGC
CACTTCTCTGCAGAATGATCTTCAGGAGGTGCCCAAGTTATATCCAGAATTTCCACCTAAAGACATGTGT
GAAAAATTACCAGAGCCTCAGTCTTTTAGTTCAGCTCCTCAGCATGCTGAAGTAAATGGAAACACCTCAA
CTCCAAGTGCAGGGGCAGTTGCTGCACCTGCTTCTCTGTCTTTACCATCACAAAGTTGTCCAGCAGAAGC
TCCTCCTGCTTATACTCCTCAAGCTGCTGAAGGTCACTACACTGTATCCTATGGAACAGATTCTGGGGAG
TTTTCATCAGTTGGAGAGGAGTTTTATAGGAATCATTCTCAGCCACCGCCTCTTGAGACCTTAGGGCTGG
ATGCAGATGAATTGATTTTGATACCAAATGGAGTACAGATTTTTTTTGTAAATCCTGCAGGGGAGGTTAG
TGCACCTTCGTATCCTGGGTACCTTCGAATTGTGAGGTTTTTGGATAATTCTCTCGATACGGTTCTAAAC
CGTCCTCCCGGGTTTCTTCAGGTTTGTGACTGGTTATATCCTCTAGTTCCTGATAGATCTCCGGTTCTGA
AATGTACTGCGGGAGCCTACATGTTTCCTGATACAATGCTACAAGCAGCAGGATGCTTTGTGGGGGTCGT
CCTGTCCTCTGAGTTACCAGAGGATGATAGAGAGCTCTTTGAGGATCTGTTAAGGCAAATGTCTGACCTT

Figure 36 part - 145

CGGCTCCAGGCCAACTGGAACAGAGCAGAAGAAGAAAATGAATTCCAAATCCCTGGAAGAACTAGACCCT
CCTCTGACCAACTAAAAGAAGCCTCTGGCACTGATGTGAAACAGTTGGACCAAGGCAATAAGGATGTACG
TCATAAAGGAAAACGTGGAAAAAGGGCTAAAGATACTTCAAGTGAAGAAGTTAACCTGAGTCACATTGTA
CCATGTGAGCCAGTTCCAGAAGAAAAGCCAAAAGAATTACCTGAATGGAGTGAAAAAGTGGCTCACAACA
TTTTGTCAGGTATTACAGTAATGTTAATTTTTTTCCCTGTATGACATTAAGCCTTTGGAACCAAATAAAG
ATATTGTTTATTAGGGAATACTGAGAAAGATAATATTTTGTATTTTGGTTTTAAATGATCAATTTAGAAA
TAAATGTAGAAGGAACTAGTCTTTTGAAACATCAGATATTGTCATATAAGTATAAATTCTTCCTGGCCTA
TTATTCTGTTTTACTATTGGGAAAATGGATAGTGAAAAGCTTCAGGAATCTTCAAATTCTTAATAGTTCT
GAATCTAAAATTAGTTATGTTCGTTTCCCCTTTGAAGCTCCCTCTTAACCTCCCCCTACCCCTGTCCCTC
AGCTGTGGTCTGAATGTGTCCCTTCAAAATTCATATATTGAAATCCTAACCCCTGAGGTGATGGTTTTAG
GAGGTGGGGCCTTTGGAAGGTGATTAGGTCATGAGGGAGGAGCCCTCATCAATGGGATTAGTCCCTTATA
AAAGAGATCCCAAAGAGCTGCCTTGTCCCTTTCACTATGTGAGGAAGCAGTAAGAAGGTGTCATTCTATG
AACCAGGAAGTGGGCCCCTCACCAGAGACCAAATGTACCAGCACCTTAGTCTTGTACTTCCCAGCCTCTA
GAATTGTGAGAAATAAATTTTTGTTGTTAAT

Human SPG20 mRNA sequence - var3 (public gi: 7023938) (SEQ ID NO: 369)

GATAATTCTCTCGATACGGTTCTAAACCGTCCTCCCGGGTTTCTTCAGGTTTGTGACTGGTTATATCCTC
TAGTTCCTGATAGATCTCCGGTTCTGAAATGTACTGCGGGAGCCTACATGTTTCCTGATACAATGCTACA
AGCAGCAGGATGCTTTGTGGGGGTCGTCCTGTCCTCTGAGTTACCAGAGGATGATAGAGAGCTCTTTGAG
GATCTGTTAAGGCAAATGTCTGACCTTCGGCTCCAGGCCAACTGGAACAGAGCAGAAGAAGAAAATGAAT
TCCAAATCCCTGGAAGAACTAGACCCTCCTCTGACCAACTAAAAGAAGCCTCTGGCACTGATGTGAAACA
GTTGGACCAAGGCAATAAGGATGTACGTCATAAAGGAAAACGTGGAAAAAGGGCTAAAGATACTTCAAGT
GAAGAAGTTAACCTGAGTCACATTGTACCATGTGAGCCAGTTCCAGAAGAAAAGCCAAAAGAATTACCTG
AACGGAGTGAAAAAGTGGCTCACAACATTTTGTCAGGTGCTTCCTGGGTGAGTTGGGGTTTAGTCAAAGG
TGCTGAGATTACTGGTAAGGCAATCCAGAAAGGTGCTTCTAAACTCCGAGAGCGGATTCAACCAGAAGAA
AAACCCGTGGAAGTTAGTCCAGCTGTCACCAAGGGACTTTATATAGCGAAGCAAGCTACAGGAGGAGCAG
CAAAAGTCAGTCAGTTCCTGGTTGATGGAGTTTGCACTGTAGCAAATTGCGTTGGAAAAGAACTAGCTCC
ACATGTCAAGAAGCATGGAAGCAAACTTGTTCCAGAATCTCTTAAAAAAGACAAAGATGGGAAATCTCCT
CTGGATGGTGCTATGGTTGTAGCAGCAAGTAGTGTTCAAGGATTTTCAACTGTCTGGCAAGGATTGGAAT
GTGCAGCTAAATGCATCGTTAACAATGTTTCAGCAGAAACTGTACAAACTGTCAGATACAAATACGGATA
TAATGCAGGAGAAGCTACCCACCATGCGGTGGATTCTGCGGTCAATGTTGGCGTAACTGCCTACAATATT
AACAACATTGGTATCAAAGCAATGGTGAAGAAAACTGCAACACAAACAGGACACACTCTCCTTGAGGACT
ATCAGATAGTTGATAATTCTCAGAGGGAAAATCAAGAAGGAGCAGCAAATGTCAACGTGAGAGGGGAGAA
GGGTGAGCAGACGAAGGAAGTAAAGGAGGCAAAGAAGAAAGATAAATGATGAAGTGCTGGGAATCACTTA
TACCAAAGCCTTATGAAATGGATGAAATTTTGTTAAATAGGCAAATGTGGAATTCCTCACAGATTAACCA
GTATTTTTTAAATGTATTCATTCCTACAAATTAACTTTCATAAATTTTATGGCATGTCTTCTATTTAAAA
GGAAAAGAATAAGTATTCTTGCATCTGGCCTTAGAAATGTGAAGTTATATTCTCAAGTTTATTTTTTTCC
AAGTGTAGCTAAAATATTTTTGCAGGTAAAATAAAGCTGATAGTACATGTGTTGTTCAAACCTTGTTAAA
CCTAATATTGAACTATTTTTATATCTGCTGTCTTTCAGAAGGCAAATAGGAAACTATATATTTGCTTAAA
AATTGGCATTTAGTAACCTTAATTCTTTTTATAGAAGGAATGACTTAAAGTATTGTCCCCTCTTTTTGCA
CTAATTGTGGATTTTTTTAGATGCTTCTCAAAATTTTCAGTGTGTAAGCTAAACAAAAACTAAAACTAAG
AATTCTCAAAAAAACTTGTTCAAAACAGGGAAAGACTGATGAAAAGTAAAATGGACTACTTTTGTAACTT
ACCTGTTTGTTAGGAAATGGAATGGTCTCTTTGATTTAAAATGAATAAAAATAGATTATTACGTC

Human SPG20 mRNA sequence - var4 (public gi: 16553694) (SEQ ID NO: 370)

GTGCATGTTTTCTTCAGTCCTGGAAGGAAATCATAAGTGATTTGCCCCAAAAGGATTGCTGTTGAAAATG
GAGCAAGAGCCACAAAATGGAGAACCTGCTGAAATTAAGATCATCAGAGAAGCATATAAGAAGGCCTTTT
TATTTGTTAACAAAGGTCTGAATACAGATGAATTAGGTCAGAAGGAAGAAGCAAAGAACTACTATAAGCA
AGGAATAGGACACCTGCTCAGAGGGATCAGCATTTCATCAAAAGAGTCTGAACACACAGGTCCTGGGTGG
GAATCTGCTAGACAGATGCAACAGAAAATGAAAGAAACTCTACAGAATGATCTTCGTATCCTGGGTACCT
TCGAATTGTGAGGTTTTTGGATAATTCTCTCGATACGGTTCTAAACCGTCCTCCCGGGTTTCTTCAGGTT
TGTGACTGGTTATATCCTCTAGTTCCTGATAGATCTCCGGTTCTGAAATGTACTGCGGGAGCCTACATGT
TTCCTGATACAATGCTACAAGCAGCAGGATGCTTTGTGGGGGTCGTCCTGTCCTCTGAGTTACCAGAGGA
TGATAGAGAGCTCTTTGAGGATCTGTTAAGGCAAATGTCTGACCTTCGGCTCCAGGCCAACTGGAACAGA
GCAGAAGAAGAAAATGAATTCCAAATCCCTGGAAGAACTAGACCCTCCTCTGACCAACTAAAAGAAGCCT
CTGGCACTGATGTGAAACAGTTGGACCAAGGCAATAAGGATGTACGTCATAAAGGAAAACGTGGAAAAAG
GGCTAAAGATACTTCAAGTGAAGAAGTTAACCTGAGTCACATTGTACCATGTGAGCCAGTTCCAGAAGAA
AAGCCAAAAGAATTACCTGAATGGAGTGAAAAAGTGGCTCACAACATTTTGTCAGGTGCTTCCTGGGTGA
GTTGGGGTTTAGTCAAAGGTGCTGAGATTACTGGTAAGGCAATCCAGAAAGGTGCTTCTAAACTCCGAGA
GCGGATTCAACCAGAAGAAAAACCCGTGGAAGTTAGTCCAGCTGTCACCAAGGGACTTTATATAGCGAAG
CAAGCTACAGGAGGAGCAGCAAAAGTCAGTCAGTTCCTGGTTGATGGAGTTTGCACTGTAGCAAATTGCG
TTGGAAAAGAACTAGCTCCACATGTCAAGAAGCATGGAAGCAAACTTGTTCCAGAATCTCTTAAAAAAGA

Figure 36 part - 146

CAAAGATGGGAAATCTCCTCTGGATGGTGCTATGGTTGTAGCAGCAAGTAGTGTTCAAGGATTTTCAACT
GTCTGGCAAGGATTGGAATGTGCAGCTAAATGCATCGTTAACAATGTTTCAGCAGAAACTGTACAAACTG
TCAGATACAAATACGGATAATGCAGGAGAAGCTACCCACCATGCGGTGGATTCTGCGGTCAATGTTGGCG
TAACTGCCTACAATATTGACAACATTGGTATCAAAGCAATGGTGAAGAAAACTGCAACACAAACAGGACA
CACTCTCCTTGAGGACTATCAGATAGTTGATAATTCTCAGAGGGAAAATCAAGAAGGAGCAGCAAATGTC
AACGTGAGAGGGGAGAAGGATGAGCAGACGAAGGAAGTAAAGGAGGCAAAGAAGAAAGATAAATGATGAA
GTGCTGGGAATCACTTATACCAAAGCCTTATGAAATGGATGAAATTTTGTTAAATAGGCAAATGTGGAAT
TCCTCACAGATTAACCAGTATTTTTTAAATGTATTCATTCCTACAAATTAACTTTCATAAATTTTATGGC
ATGTCTTCTATTTAAAAGGAAAAGAATAAGTATTCTTGCATCTGGCCTTAGAAATGTGAAGTTATATTCT
CAAGTTTATTTTTTTCCAAGTGTAGCTAAAATATTTTTGCAGGTAAAATAAAGCTGATAGTACATGTGTT
GTTCAAACCTTGTTAAACCTAATATTGAACTATTTTTATATCTGCTGTCTTTCAGAAGGCAAATAGGAAA
CTATATATTTGCTTAAAAATTGGCATTTAGTAACCTTAATTCTTTTTATAGAAGGAATGACTTAAAGTAT
TGTCCCCTCTTTTTGCACTAATTGTGGATTTTTTTAGATGCTTCTCAAAATTTTCAGTGTGTAAGCTAAA
CAAAAACTAAAACTAAGAATTCTCAAAAAAACTTGTTCAAAACAGGGAAAGACTGATGAAAAGTAAAATG
GACTACTTTTGTAACTTACCTGTTTGTTAGGAAATGGAATGGTCTCTTTGATTTAAAATGAATAAAAATA
GATTATTACGTC

Human SPG20 mRNA sequence - var5 (public gi: 21654722) (SEQ ID NO: 371)

ATGGAGCAAGAGCCACAAAATGGAGAACCTGCTGAAATTAAGATCATCAGAGAAGCATATAAGAAGGCCT
TTTTATTTGTTAACAAAGGTCTGAATACAGATGAATTAGGTCAGAAGGAAGAAGCAAAGAACTACTATAA
GCAAGGAATAGGACACCTGCTCAGAGGGATCAGCATTTCATCAAAAGAGTCTGAACACACAGGTCCTGGG
TGGGAATCTGCTAGACAGATGCAACAGAAAATGAAAGAAACTCTACAGAATGTACGCACCAGGCTGGAAA
TTCTAGAGAAGGGTCTTGCCACTTCTCTGCAGAATGATCTTCAGGAGGTGCCCAAGTTATATCCAGAATT
TCCACCTAAAGACATGTGTGAAAAATTACCAGAGCCTCAGTCTTTTAGTTCAGCTCCTCAGCATGCTGAA
GTAAATGGAAACACCTCAACTCCAAGTGCAGGGGCAGTTGCTGCACCTGCTTCTCTGTCTTTACCATCAC
AAAGTTGTCCAGCAGAAGCTCCTCCTGCTTATACTCCTCAAGCTGCTGAAGGTCACTACACTGTATCCTA
TGGAACAGATTCTGGGGAGTTTTCATCAGTTGGAGAGGAGTTTTATAGGAATCATTCTCAGCCACCGCCT
CTTGAGACCTTAGGGCTGGATGCAGATGAATTGATTTTGATACCAAATGGAGTACAGATTTTTTTTGTAA
ATCCTGCAGGGGAGGTTAGTGCACCTTCGTATCCTGGGTACCTTCGAATTGTGAGGTTTTTGGATAATTC
TCTCGATACGGTTCTAAACCGTCCTCCCGGGTTTCTTCAGGTTTGTGACTGGTTATATCCTCTAGTTCCT
GATAGATCTCCGGTTCTGAAATGTACTGCGGGAGCCTACATGTTTCCTGATACAATGCTACAAGCAGCAG
GATGCTTTGTGGGGGTCGTCCTGTCCTCTGAGTTACCAGAGGATGATAGAGAGCTCTTTGAGGATCTGTT
AAGGCAAATGTCTGACCTTCGGCTCCAGGCCAACTGGAACAGAGCAGAAGAAGAAAATGAATTCCAAATC
CCTGGAAGAACTAGACCCTCCTCTGACCAACTAAAAGAAGCCTCTGGCACTGATGTGAAACAGTTGGACC
AAGGCAATAAGGATGTACGTCATAAAGGAAAACGTGGAAAAAGGGCTAAAGATACTTCAAGTGAAGAAGT
TAACCTGAGTCACATTGTACCATGTGAGCCAGTTCCAGAAGAAAAGCCAAAAGAATTACCTGAATGGAGT
GAAAAAGTGGCTCACAACATTTTGTCAGGTGCTTCCTGGGTGAGTTGGGGTTTAGTCAAAGGTGCTGAGA
TTACTGGTAAGGCAATCCAGAAAGGTGCTTCTAAACTCCGAGAGCGGATTCAACCAGAAGAAAAACCCGT
GGAAGTTAGTCCAGCTGTCACCAAGGGACTTTATATAGCGAAGCAAGCTACAGGAGGAGCAGCAAAAGTC
AGTCAGTTCCTGGTTGATGGAGTTTGCACTGTAGCAAATTGCGTTGGAAAAGAACTAGCTCCACATGTCA
AGAAGCATGGAAGCAAACTTGTTCCAGAATCTCTTAAAAAAGACAAAGATGGGAAATCTCCTCTGGATGG
TGCTATGGTTGTAGCAGCAAGTAGTGTTCAAGGATTTTCAACTGTCTGGCAAGGATTGGAATGTGCAGCT
AAATGCATCGTTAACAATGTTTCAGCAGAAACTGTACAAACTGTCAGATACAAATACGGATATAATGCAG
GAGAAGCTACCCACCATGCGGTGGATTCTGCGGTCAATGTTGGCGTAACTGCCTACAATATTAACAACAT
TGGTATCAAAGCAATGGTGAAGAAAACTGCAACACAAACAGGACACACTCTCCTTGAGGACTATCAGATA
GTTGATAATTCTCAGAGGGAAAATCAAGAAGGAGCAGCAAATGTCAACGTGAGAGGGGAGAAGGATGAGC
AGACGAAGGAAGTAAAGGAGGCAAAGAAGAAAGATAAATGA

Human SPG20 mRNA sequence - var6 (public gi: 22074831) (SEQ ID NO: 372)

GCGGCCGCGCAGGGAGCTCTCGAGGCAACGCCGGGGCGCCCGAGGTCTGGAAGGCGCAGAAATGGAGCAA
GAGCCACAAAATGGAGAACCTGCTGAAATTAAGATCATCAGAGAAGCATATAAGAAGGCCTTTTTATTTG
TTAACAAAGGTCTGAATACAGATGAATTAGGTCAGAAGGAAGAAGCAAAGAACTACTATAAGCAAGGAAT
AGGACACCTGCTCAGAGGGATCAGCATTTCATCAAAAGAGTCTGAACACACAGGTCCTGGGTGGGAATCT
GCTAGACAGATGCAACAGAAAATGAAAGAAACTCTACAGAATGTACGCACCAGGCTGGAAATTCTAGAGA
AGGGTCTTGCCACTTCTCTGCAGAATGATCTTCAGGAGGTGCCCAAGTTATATCCAGAATTTCCACCTAA
AGACATGTGTGAAAAATTACCAGAGCCTCAGTCTTTTAGTTCAGCTCCTCAGCATGCTGAAGTAAATGGA
AACACCTCAACTCCAAGTGCAGGGGCAGTTGCTGCACCTGCTTCTCTGTCTTTACCATCACAAAGTTGTC
CAGCAGAAGCTCCTCCTGCTTATACTCCTCAAGCTGCTGAAGGTCACTACACTGTATCCTATGGAACAGA
TTCTGGGGAGTTTTCATCAGTTGGAGAGGAGTTTTATAGGAATCATTCTCAGCCACCGCCTCTTGAGACC
TTAGGGCTGGATGCAGATGAATTGATTTTGATACCAAATGGAGTACAGATTTTTTTTGTAAATCCTGCAG
GGGAGGTTAGTGCACCTTCGTATCCTGGGTACCTTCGAATTGTGAGGTTTTTGGATAATTCTCTCGATAC
GGTTCTAAACCGTCCTCCCGGGTTTCTTCAGGTTTGTGACTGGTTATATCCTCTAGTTCCTGATAGATCT

Figure 36 part - 147

CCGGTTCTGAAATGTACTGCGGGAGCCTACATGTTTCCTGATACAATGCTACAAGCAGCAGGATGCTTTG
TGGGGGTCGTCCTGTCCTCTGAGTTACCAGAGGATGATAGAGAGCTCTTTGAGGATCTGTTAAGGCAAAT
GTCTGACCTTCGGCTCCAGGCCAACTGGAACAGAGCAGAAGAAGAAAATGAATTCCAAATCCCTGGAAGA
ACTAGACCCTCCTCTGACCAACTAAAAGAAGCCTCTGGCACTGATGTGAAACAGTTGGACCAAGGCAATA
AGGATGTACGTCATAAAGGAAAACGTGGAAAAAGGGCTAAAGATACTTCAAGTGAAGAAGTTAACCTGAG
TCACATTGTACCATGTGAGCCAGTTCCAGAAGAAAAGCCAAAAGAATTACCTGAATGGAGTGAAAAAGTG
GCTCACAACATTTTGTCAGGTGCTTCCTGGGTGAGTTGGGGTTTAGTCAAAGGTGCTGAGATTACTGGTA
AGGCAATCCAGAAAGGTGCTTCTAAACTCCGAGAGCGGATTCAACCAGAAGAAAAACCCGTGGAAGTTAG
TCCAGCTGTCACCAAGGGACTTTATATAGCGAAGCAAGCTACAGGAGGAGCAGCAAAAGTCAGTCAGTTC
CTGGTTGATGGAGTTTGCACTGTAGCAAATTGCGTTGGAAAAGAACTAGCTCCACATGTCAAGAAGCATG
GAAGCAAACTTGTTCCAGAATCTCTTAAAAAAGACAAAGATGGGAAATCTCCTCTGGATGGTGCTATGGT
TGTAGCAGCAAGTAGTGTTCAAGGATTTTCAACTGTCTGGCAAGGATTGGAATGTGCAGCTAAATGCATC
GTTAACAATGTTTCAGCAGAAACTGTACAAACTGTCAGATACAAATACGGATATAATGCAGGAGAAGCTA
CCCACCATGCGGTGGATTCTGCGGTCAATGTTGGCGTAACTGCCTACAATATTAACAACATTGGTATCAA
AGCAATGGTGAAGAAAACTGCAACACAAACAGGACACACTCTCCTTGAGGACTATCAGATAGTTGATAAT
TCTCAGAGGGAAAATCAAGAAGGAGCAGCAAATGTCAACGTGAGAGGGGAGAAGGATGAGCAGACGAAGG
AAGTAAAGGAGGCAAAGAAGAAAGATAAATGATGAAGTGCTGGGAATCACTTATACCAAAGCCTTATGAA
ATGGATGAAATTTTGTTAAATAGGCAAATGTGGAATTCCTCACAGATTAACCAGTATTTTTTAAATGTAT
TCATTCCTACAAATTAACTTTCATAAATTTTATGGCATGTCTTCTATTTAAAAGGAAAAGAATAAGTATT
CTTGCATCTGGCCTTAGAAATGTGAAGTTATATTCTCAAGTTTATTTTTTTCCAAGTGTAGCTAAAATAT
TTTTGCAGGTAAAATAAAGCTGATAGTACATGTGTTGTTCAAACCTTGTTAAACCTAATATTGAACTATT
TTTATATCTGCTGTCTTTCAGAAGGCAAATAGGAAACTATATATTTGCTTAAAAATTGGCATTTAGTAAC
CTTAATTCTTTTTATAGAAGGAATGACTTAAAGTATTGTCCCCTCTTTTTGCACTAATTGTGGATTTTTT
TAGATGCTTCTCAAAATTTTCAGTGTGTAAGCTAAACAAAAACTAAAACTAAGAATTCTCAAAAAAACTT
GTTCAAAACAGGGAAAGACTGATGAAAAGTAAAATGGACTACTTTTGTAACTTACCTGTTTGTTAGGAAA
TGGAATGGTCTCTTTGATTTAAAATAAATAAAAATAGATTATTACGTCTTTTGTATTGAGACTGTATTGT
TATGAGCCTAGGAAATTTGGGAACATGATTGTATTGTATTAAAATTCGAAGTGATTATTATCAGCTTAAT
TGGATTAAAAAAGTACTTCAAGAAATTATTTTATCATATCTGCTTCTGTTTTTCCAAAAGGTTAAAACTT
GTAAAAAAAATATATATAAACAATTGAGTTTACTAATGGTAAACATTTTTATTCTGGGATTCGGTCATTG
GAATTTATATTAAAAGACAAGTTATTAAAAAGGAAAGGTTCTATTCATAATCAGGGTAAAGAATATGAAA
ACCTTAGACGTAATCCATGGTGGATAGGCATTATGGTTTCCACTTTGGCAGAAGGCAGACTATTCACAGC
CCTATTTACTTACATAGGCTAAAAAACTATGTAACTAAATACCTAATGGTATTTAATTTTTGTTTATTGA
ATTTAAGAGATTGGTATTAGTTTTCATAGCTGTAGTCCATTCTAATAATTTCTGATCTTCTAGTGGCTAC
TTAATTAGACATTATTTGAAGCTGTCTGAAGAATGCACTTTATGAATTAAAAAACTGAATTGCCTGACCT
CGTTATCACATGAGCTTATATTTTGGGAACACATAGAACTGATGGAGGCTTTTCCTAAGGCCAAGGATAA
TGTACTAGTTGTTAAAATGGAAATAAAAGTGAAGTGGTAAAT

Human SPG20 mRNA sequence - var7 (public gi: 20070809) (SEQ ID NO: 373)

GGCGGCGGCGTGCTGCGGGCTCTGTGGCGGGAGCGAGGCCGACGGGCGGGGCCGTGCGGCCGCGTGACGC
GAAGCGTTCGAGAGCGCGCGTCGTGGAACGTCTTGGTTGCCACGGCAAGCGCGCGCGCGAGGCCTTGGGA
ACCTCGGGACCGGCCCCCGGCGAGCGCAGCGGCGCCCAGTAGTCATCTTAGTGGGATTTGGGGAAGCAAC
AGGGCTGTGTGGGGTAACCTGCCACCTTTAAGTGGAAATCAGAAATGGAGCAAGAGCCACAAAATGGAGA
ACCTGCTGAAATTAAGATCATCAGAGAAGCATATAAGAAGGCCTTTTTATTTGTTAACAAAGGTCTGAAT
ACAGATGAATTAGGTCAGAAGGAAGAAGCAAAGAACTACTATAAGCAAGGAATAGGACACCTGCTCAGAG
GGATCAGCATTTCATCAAAAGAGTCTGAACACACAGGTCCTGGGTGGGAATCTGCTAGACAGATGCAACA
GAAAATGAAAGAAACTCTACAGAATGTACGCACCAGGCTGGAAATTCTAGAGAAGGGTCTTGCCACTTCT
CTGCAGAATGATCTTCAGGAGGTGCCCAAGTTATATCCAGAATTTCCACCTAAAGACATGTGTGAAAAAT
TACCAGAGCCTCAGTCTTTTAGTTCAGCTCCTCAGCATGCTGAAGTAAATGGAAACACCTCAACTCCAAG
TGCAGGGGCAGTTGCTGCACCTGCTTCTCTGTCTTTACCATCACAAAGTTGTCCAGCAGAAGCTCCTCCT
GCTTATACTCCTCAAGCTGCTGAAGGTCACTACACTGTATCCTATGGAACAGATTCTGGGGAGTTTTCAT
CAGTTGGAGAGGAGTTTTATAGGAATCATTCTCAGCCACCGCCTCTTGAGACCTTAGGGCTGGATGCAGA
TGAATTGATTTTGATACCAAATGGAGTACAGATTTTTTTTGTAAATCCTGCAGGGGAGGTTAGTGCACCT
TCGTATCCTGGGTACCTTCGAATTGTGAGGTTTTTGGATAATTCTCTCGATACGGTTCTAAACCGTCCTC
CCGGGTTTCTTCAGGTTTGTGACTGGTTATATCCTCTAGTTCCTGATAGATCTCCGGTTCTGAAATGTAC
TGCGGGAGCCTACATGTTTCCTGATACAATGCTACAAGCAGCAGGATGCTTTGTGGGGGTCGTCCTGTCC
TCTGAGTTACCAGAGGATGATAGAGAGCTCTTTGAGGATCTGTTAAGGCAAATGTCTGACCTTCGGCTCC
AGGCCAACTGGAACAGAGCAGAAGAAGAAAATGAATTCCAAATCCCTGGAAGAACTAGACCCTCCTCTGA
CCAACTAAAAGAAGCCTCTGGCACTGATGTGAAACAGTTGGACCAAGGCAATAAGGATGTACGTCATAAA
GGAAAACGTGGAAAAAGGGCTAAAGATACTTCAAGTGAAGAAGTTAACCTGAGTCACATTGTACCATGTG
AGCCAGTTCCAGAAGAAAAGCCAAAAGAATTACCTGAATGGAGTGAAAAAGTGGCTCACAACATTTTGTC
AGGTGCTTCCTGGGTGAGTTGGGGTTTAGTCAAAGGTGCTGAGATTACTGGTAAGGCAATCCAGAAAGGT
GCTTCTAAACTCCGAGAGCGGATTCAACCAGAAGAAAAACCCGTGGAAGTTAGTCCAGCTGTCACCAAGG
GACTTTATATAGCGAAGCAAGCTACAGGAGGAGCAGCAAAAGTCAGTCAGTTCCTGGTTGATGGAGTTTG

Figure 36 part - 148

CACTGTAGCAAATTGCGTTGGAAAAGAACTAGCTCCACATGTCAAGAAGCATGGAAGTCAAACTTGTTCC
AGAATCTCTTAAAAAAGACAAAGATGGGAAATCTCCTCTGGATGGTGCTATGGTTGTAGCAGCAAGTAGT
GTTCAAGGATTTTCAACTGTCTGGCAAGGATTGGAATGTGCAGCTAAATGCATCGTTAACAATGTTTCAG
CAGAAACTGTACAAACTGTCAGATACAAATACGGATATAATGCAGGAGAAGCTACCCACCATGCGGTGGA
TTCTGCGGTCAATGTTGGCGTAACTGCCTACAATATTAACAACATTGGTATCAAAGCAATGGTGAAGAAA
ACTGCAACACAAACAGGACACACTCTCCTTGAGGACTATCAGATAGTTGATAATTCTCAGAGGGAAAATC
AAGAAGGAGCAGCAAATGTCAACGTGAGAGGGGAGAAGGATGAGCAGACGAAGGAAGTAAAGGAGGCAAA
GAAGAAAGATAAATGATGAAGTGCTGGGAATCACTTATACCAAAGCCTTATGAAATGGATGAAATTTTGT
TAAATAGGCAAATGTGGAATTCCTCACAGATTAACCAGTATTTTTTAAATGTATTCATTCCTACAAATTA
ACTTTCATAAATTTTATGGCATGTCTTCTATTTAAAAGGAAAAGAATAAGTATTCTTGCATCTGGCCTTA
GAAATGTGAAGTTATATTCTCAAGTTTATTTTTTTCCAAGTGTAGCTAAAATATTTTTGCAGGTAAAATA
AAGCTGATAGTACATGTGTTGTTCAAACCTTGTTAAACCTAATATTGAACTATTTTTATATCTGCTGTCT
TTCAGAAGGCAAATAGGAAACTATATATTTGCTTAAAAATTGGCATTTAGTAACCTTAATTCTTTTTATA
GAAGGAATGACTTAAAGTATTGTCCCCTCTTTTTGCACTAATTGTGGATTTTTTTAGATGCTTCTCAAAA
TTTTCAGTGTGTAAGCTAAACAAAAACTAAAACTAAGAATTCTCAAAAAAACTTGTTCAAAACAGGGAAA
GACTGATGAAAAGTAAAATGGACTACTTTTGTAACTTACCTGTTTGTTAGGAAATGGAATGGTCTCTTTG
ATTTAAAATGAATAAAAATAGATTATTACGTCTTTTGTATTGAGACTGTATTGTTATGAGCCTAGGAAAT
TTGGGAACATGATTGTATTGTATTAAAATTCGAAGTGATTATTATCAGCTTAATTGGATTAAAAAAGTAC
TTCAAGAAAAAAAAAAAAAAAAAAAAAAAAAAAA

Human SPG20 mRNA sequence - var8 (public gi: 3043743) (SEQ ID NO: 374)

GCGGCCGCGCAGGGAGCTCTCGAGGCAACGCCGGGGCGCCCGAGGTCTGGAAGGCGCAGAAATGGAGCAA
GAGCCACAAAATGGAGAACCTGCTGAAATTAAGATCATCAGAGAAGCATATAAGAAGGCCTTTTTATTTG
TTAACAAAGGTCTGAATACAGATGAATTAGGTCAGAAGGAAGAAGCAAAGAACTACTATAAGCAAGGAAT
AGGACACCTGCTCAGAGGGATCAGCATTTCATCAAAAGAGTCTGAACACACAGGTCCTGGGTGGGAATCT
GCTAGACAGATGCAACAGAAAATGAAAGAAACTCTACAGAATGTACGCACCAGGCTGGAAATTCTAGAGA
AGGGTCTTGCCACTTCTCTGCAGAATGATCTTCAGGAGGTGCCCAAGTTATATCCAGAATTTCCACCTAA
AGACATGTGTGAAAAATTACCAGAGCCTCAGTCTTTTAGTTCAGCTCCTCAGCATGCTGAAGTAAATGGA
AACACCTCAACTCCAAGTGCAGGGGCAGTTGCTGCACCTGCTTCTCTGTCTTTACCATCACAAAGTTGTC
CAGCAGAAGCTCCTCCTGCTTATACTCCTCAAGCTGCTGAAGGTCACTACACTGTATCCTATGGAACAGA
TTCTGGGGAGTTTTCATCAGTTGGAGAGGAGTTTTATAGGAATCATTCTCAGCCACCGCCTCTTGAGACC
TTAGGGCTGGATGCAGATGAATTGATTTTGATACCAAATGGAGTACAGATTTTTTTTGTAAATCCTGCAG
GGGAGGTTAGTGCACCTTCGTATCCTGGGTACCTTCGAATTGTGAGGTTTTTGGATAATTCTCTCGATAC
GGTTCTAAACCGTCCTCCCGGGTTTCTTCAGGTTTGTGACTGGTTATATCCTCTAGTTCCTGATAGATCT
CCGGTTCTGAAATGTACTGCGGGAGCCTACATGTTTCCTGATACAATGCTACAAGCAGCAGGATGCTTTG
TGGGGGTCGTCCTGTCCTCTGAGTTACCAGAGGATGATAGAGAGCTCTTTGAGGATCTGTTAAGGCAAAT
GTCTGACCTTCGGCTCCAGGCCAACTGGAACAGAGCAGAAGAAGAAAATGAATTCCAAATCCCTGGAAGA
ACTAGACCCTCCTCTGACCAACTAAAAGAAGCCTCTGGCACTGATGTGAAACAGTTGGACCAAGGCAATA
AGGATGTACGTCATAAAGGAAAACGTGGAAAAAGGGCTAAAGATACTTCAAGTGAAGAAGTTAACCTGAG
TCACATTGTACCATGTGAGCCAGTTCCAGAAGAAAAGCCAAAAGAATTACCTGAATGGAGTGAAAAAGTG
GCTCACAACATTTTGTCAGGTGCTTCCTGGGTGAGTTGGGGTTTAGTCAAAGGTGCTGAGATTACTGGTA
AGGCAATCCAGAAAGGTGCTTCTAAACTCCGAGAGCGGATTCAACCAGAAGAAAAACCCGTGGAAGTTAG
TCCAGCTGTCACCAAGGGACTTTATATAGCGAAGCAAGCTACAGGAGGAGCAGCAAAAGTCAGTCAGTTC
CTGGTTGATGGAGTTTGCACTGTAGCAAATTGCGTTGGAAAAGAACTAGCTCCACATGTCAAGAAGCATG
GAAGCAAACTTGTTCCAGAATCTCTTAAAAAAGACAAAGATGGGAAATCTCCTCTGGATGGTGCTATGGT
TGTAGCAGCAAGTAGTGTTCAAGGATTTTCAACTGTCTGGCAAGGATTGGAATGTGCAGCTAAATGCATC
GTTAACAATGTTTCAGCAGAAACTGTACAAACTGTCAGATACAAATACGGATATAATGCAGGAGAAGCTA
CCCACCATGCGGTGGATTCTGCGGTCAATGTTGGCGTAACTGCCTACAATATTAACAACATTGGTATCAA
AGCAATGGTGAAGAAAACTGCAACACAAACAGGACACACTCTCCTTGAGGACTATCAGATAGTTGATAAT
TCTCAGAGGGAAAATCAAGAAGGAGCAGCAAATGTCAACGTGAGAGGGGAGAAGGATGAGCAGACGAAGG
AAGTAAAGGAGGCAAAGAAGAAAGATAAATGATGAAGTGCTGGGAATCACTTATACCAAAGCCTTATGAA
ATGGATGAAATTTTGTTAAATAGGCAAATGTGGAATTCCTCACAGATTAACCAGTATTTTTTAAATGTAT
TCATTCCTACAAATTAACTTTCATAAATTTTATGGCATGTCTTCTATTTAAAAGGAAAAGAATAAGTATT
CTTGCATCTGGCCTTAGAAATGTGAAGTTATATTCTCAAGTTTATTTTTTTCCAAGTGTAGCTAAAATAT
TTTTGCAGGTAAAATAAAGCTGATAGTACATGTGTTGTTCAAACCTTGTTAAACCTAATATTGAACTATT
TTTATATCTGCTGTCTTTCAGAAGGCAAATAGGAAACTATATATTTGCTTAAAAATTGGCATTTAGTAAC
CTTAATTCTTTTTATAGAAGGAATGACTTAAAGTATTGTCCCCTCTTTTTGCACTAATTGTGGATTTTTT
TAGATGCTTCTCAAAATTTTCAGTGTGTAAGCTAAACAAAAACTAAAACTAAGAATTCTCAAAAAAACTT
GTTCAAAACAGGGAAAGACTGATGAAAAGTAAAATGGACTACTTTTGTAACTTACCTGTTTGTTAGGAAA
TGGAATGGTCTCTTTGATTTAAAATGAATAAAAATAGATTATTACGTCTTTTGTATTGAGACTGTATTGT
TATGAGCCTAGGAAATTTGGGAACATGATTGTATTGTATTAAAATTCGAAGTGATTATTATCAGCTTAAT
TGGATTAAAAAAGTACTTCAAGAAATTATTTTATCATATCTGCTTCTGTTTTTCCAAAAGGTTAAAACTT
GTAAAAAAAATATATATAAACAATTGAGTTTACTAATGGTAAACATTTTTATTCTGGGATTCGGTCATTG

Figure 36 part - 149

GAATTTATATTAAAAGACAAGTTATTAAAAAGGAAAGGTTCTATTCATAATCAGGGTAAAGAATATGAAA
ACCTTAGACGTAATCCATGGTGGATAGGCATTATGGTTTCCACTTTGGCAGAAGGCAGACTATTCACAGC
CCTATTTACTTACATAGGCTAAAAAACTATGTAACTAAATACCTAATGGTATTTAATTTTTGTTTATTGA
ATTTAAGAGATTGGTATTAGTTTTCATAGCTGTAGTCCATTCTAATAATTTCTGATCTTCTAGTGGCTAC
TTAATTAGACATTATTTGAAGCTGTCTGAAGAATGCACTTTATGAATTAAAAAACTGAATTGCCTGACCT
CGTTATCACATGAGCTTATATTTTGGGAACACATAGAACTGATGGAGGCTTTTCCTAAGGCCAAGGATAA
TGTACTAGTTGTTAAAATGGAAATAAAAGTGAAGTGGTAAAT

Human SPG20 protein sequence - var1 (public gi: 28436885) (SEQ ID NO: 386)
MEQEPQNGEPAEIKIIREAYKKAFLFVNKGLNTDELGQKEEAKNYYKQGIGHLLRGISISSKESEHTGTG
WESARQMQQKMKETLQNVRTRLEILEKGLATSLQNDLQEVPKLYPEFPPKDMCEKLPEPQSFSSAPQHAE
VNGNTSTPSAGAVAAPASLSLPSQSCPAEAPPAYTPQAAEGHYTVSYGTDSGEFSSVGEEFYRNHSQPPP
LETLGLDADELILIPNGVQIFFVNPAGEVSAPSYPGYLRIVRFLDNSLDTVLNRPPGFLQVCDWLYPLVP
DRSPVLKCTAGAYMFPDTMLQAAGCFVGVVLSSELPEDDRELFEDLLRQMSDLRLQANWNRAEEENEFQI
PGRTRPSSDQLKEASGTDVKQLDQGNKDVRHKGKRGKRAKDTSSEEVNLSHIVPCEPVPEEKPKELHEWS
EKVAHNILSGASWVSWGLVKGAEITGKAIQKGASKLRERIQPEEKPVEVSPAVTKGLYIAKQATGGAAKV
SQFLVDGVCTVANCVGKELAPHVKKHGSKLVPESLKKDKDGKSPLDGAMVVAASSVQGFSTVWQGLECAA
KCIVNNVSAETVQTVRYKYGYNAGEATHHAVDSAVNVGVTAYNINNIGIKAMVKKTATQTGHTLLEDYQI
VDNSQRENQEGAANVNVRGEKDEQTKEVKEAKKKDK

Human SPG20 protein sequence - var2 (public gi: 22074832) (SEQ ID NO: 387)
MEQEPQNGEPAEIKIIREAYKKAFLFVNKGLNTDELGQKEEAKNYYKQGIGHLLRGISISSKESEHTGPG
WESARQMQQKMKETLQNVRTRLEILEKGLATSLQNDLQEVPKLYPEFPPKDMCEKLPEPQSFSSAPQHAE
VNGNTSTPSAGAVAAPASLSLPSQSCPAEAPPAYTPQAAEGHYTVSYGTDSGEFSSVGEEFYRNHSQPPP
LETLGLDADELILIPNGVQIFFVNPAGEVSAPSYPGYLRIVRFLDNSLDTVLNRPPGFLQVCDWLYPLVP
DRSPVLKCTAGAYMFPDTMLQAAGCFVGVVLSSELPEDDRELFEDLLRQMSDLRLQANWNRAEEENEFQI
PGRTRPSSDQLKEASGTDVKQLDQGNKDVRHKGKRGKRAKDTSSEEVNLSHIVPCEPVPEEKPKELPEWS
EKVAHNILSGASWVSWGLVKGAEITGKAIQKGASKLRERIQPEEKPVEVSPAVTKGLYIAKQATGGAAKV
SQFLVDGVCTVANCVGKELAPHVKKHGSKLVPESLKKDKDGKSPLDGAMVVAASSVQGFSTVWQGLECAA
KCIVNNVSAETVQTVRYKYGYNAGEATHHAVDSAVNVGVTAYNINNIGIKAMVKKTATQTGHTLLEDYQI
VDNSQRENQEGAANVNVRGEKDEQTKEVKEAKKKDK

Human SPG20 protein sequence - var3 (public gi: 3043744) (SEQ ID NO: 388)
RPRRELSRQRRGARGLEGAEMEQEPQNGEPAEIKIIREAYKKAFLFVNKGLNTDELGQKEEAKNYYKQGI
GHLLRGISISSKESEHTGPGWESARQMQQKMKETLQNVRTRLEILEKGLATSLQNDLQEVPKLYPEFPPK
DMCEKLPEPQSFSSAPQHAEVNGNTSTPSAGAVAAPASLSLPSQSCPAEAPPAYTPQAAEGHYTVSYGTD
SGEFSSVGEEFYRNHSQPPPLETLGLDADELILIPNGVQIFFVNPAGEVSAPSYPGYLRIVRFLDNSLDT
VLNRPPGFLQVCDWLYPLVPDRSPVLKCTAGAYMFPDTMLQAAGCFVGVVLSSELPEDDRELFEDLLRQM
SDLRLQANWNRAEEENEFQIPGRTRPSSDQLKEASGTDVKQLDQGNKDVRHKGKRGKRAKDTSSEEVNLS
HIVPCEPVPEEKPKELPEWSEKVAHNILSGASWVSWGLVKGAEITGKAIQKGASKLRERIQPEEKPVEVS
PAVTKGLYIAKQATGGAAKVSQFLVDGVCTVANCVGKELAPHVKKHGSKLVPESLKKDKDGKSPLDGAMV
VAASSVQGFSTVWQGLECAAKCIVNNVSAETVQTVRYKYGYNAGEATHHAVDSAVNVGVTAYNINNIGIK
AMVKKTATQTGHTLLEDYQIVDNSQRENQEGAANVNVRGEKDEQTKEVKEAKKKDK

Unigene Name: WASF1 Unigene ID: Hs.75850

Human WASF1 mRNA sequence - var1 (public gi: 4507912) (SEQ ID NO: 375)
CTTCTCTTGCACTTGCGGATGATGAACTGGAATAACGATGAAAGAAAGCACATCCGATCTCAACATTCAC
GTCCTGCCCTATAACCGATTAATTAATTGATCCCCAGCTAGACTAGTGTTGGAGAAATCAGCATGTTAAA
ACAACTGTTGATGATAGCTGTTGGAGTAAAGTTGCAGTGGAAGCTATGGCTGCAAAATCGTTAAAATCTT
CAAGGTGAACTGGCACAAAGGTTAATCTCAAGATGCCGCTAGTGAAAAGAAACATCGATCCTAGGCACTT
GTGCCACACAGCACTGCCTAGAGGCATTAAGAATGAACTGGAATGTGTAACCAATATTTCCTTGGCAAAT
ATAATTAGACAACTAAGTAGCCTAAGTAAATATGCTGAAGATATATTTGGAGAATTATTCAATGAAGCAC
ATAGTTTTTCCTTCAGAGTCAACTCATTGCAAGAACGTGTGGACCGTTTATCTGTTAGTGTTACACAGCT
TGATCCAAAGGAAGAAGAATTGTCTTTGCAAGATATAACAATGAGGAAAGCTTTCCGAAGTTCTACAATT
CAAGACCAGCAGCTTTTCGATCGCAAGACTTTGCCTATTCCATTACAGGAGACGTACGATGTTTGTGAAC
AGCCTCCACCTCTCAATATACTCACTCCTTATAGAGATGATGGTAAAGAAGGTCTGAAGTTTTATACCAA
TCCTTCGTATTTCTTTGATCTATGGAAAGAAAAAATGTTGCAAGATACAGAGGATAAGAGGAAGGAAAAG
AGGAAGCAGAAGCAGAAAAATCTAGATCGTCCTCATGAACCAGAAAAAGTGCCAAGAGCACCTCATGACA
GGCGGCGAGAATGGCAGAAGCTGGCCCAAGGTCCAGAGCTGGCTGAAGATGATGCTAATCTCTTACATAA
GCATATTGAAGTTGCTAATGGCCCAGCCTCTCATTTTGAAACAAGACCTCAGACATACGTGGATCATATG

Figure 36 part - 150

GATGGATCTTACTCACTTTCTGCCTTGCCATTTAGTCAGATGAGTGAGCTTCTGACTAGAGCTGAGGAAA
GGGTATTAGTCAGACCACATGAACCACCTCCACCTCCACCAATGCATGGAGCAGGAGATGCAAAACCGAT
ACCCACCTGTATCAGTTCTGCTACAGGTTTGATAGAAAATCGCCCTCAGTCACCAGCTACAGGCAGAACA
CCTGTGTTTGTGAGCCCCACTCCCCCACCTCCTCCACCACCTCTTCCATCTGCCTTGTCAACTTCCTCAT
TAAGAGCTTCAATGACTTCAACTCCTCCCCCTCCAGTACCTCCCCCACCTCCACCTCCAGCCACTGCTTT
GCAAGCTCCAGCAGTACCACCACCTCCAGCTCCTCTTCAGATTGCCCCTGGAGTTCTTCACCCAGCTCCT
CCTCCAATTGCACCTCCTCTAGTACAGCCCTCTCCACCAGTAGCTAGAGCTGCCCCAGTATGTGAGACTG
TACCAGTTCATCCACTCCCACAAGGTGAAGTTCAGGGGCTGCCTCCACCCCCACCACCGCCTCCTCTGCC
TCCACCTGGCATTCGACCATCATCACCTGTCACAGTTACAGCTCTTGCTCATCCTCCCTCTGGGCTACAT
CCAACTCCATCTACTGCCCCAGGTCCCCATGTTCCATTAATGCCTCCATCTCCTCCATCACAAGTTATAC
CTGCTTCTGAGCCAAAGCGCCATCCATCAACCCTACCTGTAATCAGTGATGCCAGGAGTGTGCTACTGGA
AGCAATACGAAAAGGTATTCAGCTACGCAAAGTAGAAGAGCAGCGTGAACAGGAAGCTAAGCATGAACGC
ATTGAAAACGATGTTGCCACCATCCTGTCTCGCCGTATTGCTGTTGAATATAGTGATTCGGAAGATGATT
CAGAATTTGATGAAGTAGATTGGTTGGAGTAAGAAAAATGCATTGATAAATATTACAAAACTGAATGCAA
ATGTCCTTTGTGGTGCTTGTTCCTTGAAAATGTTTGGTCATTCTAGTGTTTTGCTTTCTTTTCCTTATAA
TAAATGACCCTTTTCCTCCATAACTTTTGATTTCTAAGGAAAATATTAGCATACATTTCAAACTAAATGT
TTTACAGTGGCTTATCTTTTTTTTCCCCCTGAAAAGACTAATTTGGTCAAATAAACCACTAAGTATTAAG
CATGGACAGCTGTTGTTAGAGTAGCAGATTCAGTTTTTTGATATATCTTAATTGTGTACTTTGTGAATTT
TAATTTAAAGAAAGCAACTGAAATTGAAATCTTGAGGGCAGCTGTATCTACTAATGAGCCTTATTCCATT
TCCTGATGTTTTAAAAGAAGAAACACTGCCTTGATTATACGAATACACTCAGAAAGTACATTTAGCTTGT
AGTGTTGAATTCTCTTAAAGGAATGCTTGAATTTTTTCATTATTGTTTTATTGTTTTTATATACTTGCCT
TATTTGAATGTTTAGCAGTATCCCCTTCCCACTTATATATTGTGTGATATGATTTTGCTTGCCTATAGGA
GTTAAAAACTTTTCCATGTGAAATACTCTGACTTAAACATACATGTAACTTACATAACTGTTAAGAATAA
CAGTCTGATTTAATAAATGGTTCATTTTAAAAGTT

Human WASF1 mRNA sequence - var2 (public gi: 4927209) (SEQ ID NO: 376)

ATGCCGCTAGTGAAAAGAAACATCGATCCTAGGCACTTGTGCCACACAGCACTGCCTAGAGGCATTAAGA
ATGAACTGGAATGTGTAACCAATATTTCCTTGGCAAATATAATTAGACAACTAAGTAGCCTAAGTAAATA
TGCTGAAGATATATTTGGAGAATTATTCAATGAAGCACATAGTTTTTCCTTCAGAGTCAACTCATTGCAA
GAACGTGTGGACCGTTTATCTGTTAGTGTTACACAGCTTGATCCAAAGGAAGAAGAATTGTCTTTGCAAG
ATATAACAATGAGGAAAGCTTTCCGAAGTTCTACAATTCAAGACCAGCAGCTTTTCGATCGCAAGACTTT
GCCTATTCCATTACAGGAGACGTACGATGTTTGTGAACAGCCTCCACCTCTCAATATACTCACTCCTTAT
AGAGATGATGGTAAAGAAGGTCTGAAGTTTTATACCAATCCTTCGTATTTCTTTGATCTATGGAAAGAAA
AAATGTTGCAAGATACAGAGGATAAGAGGAAGGAAAAGAGGAAGCAGAAGCAGAAAAATCTAGATCGTCC
TCATGAACCAGAAAAAGTGCCAAGAGCACCTCATGACAGGCGGCGAGAATGGCAGAAGCTGGCCCAAGGT
CCAGAGCTGGCTGAAGATGATGCTAATCTCTTACATAAGCATATTGAAGTTGCTAATGGCCCAGCCTCTC
ATTTTGAAACAAGACCTCAGACATACGTGGATCATATGGATGGATCTTACTCACTTTCTGCCTTGCCATT
TAGTCAGATGAGTGAGCTTCTGACTAGAGCTGAGGAAAGGGTATTAGTCAGACCACATGAACCACCTCCA
CCTCCACCAATGCATGGAGCAGGAGATGCAAAACCGATACCCACCTGTATCAGTTCTGCTACAGGTTTGA
TAGAAAATCGCCCTCAGTCACCAGCTACAGGCAGAACACCTGTGTTTGTGAGCCCCACTCCCCCACCTCC
TCCACCACCTCTTCCATCTGCCTTGTCAACTTCCTCATTAAGAGCTTCAATGACTTCAACTCCTCCCCCT
CCAGTACCTCCCCCACCTCCACCTCCAGCCACTGCTTTGCAAGCTCCAGCAGTACCACCACCTCCAGCTC
CTCTTCAGATTGCCCCTGGAGTTCTTCACCCAGCTCCTCCTCCAATTGCACCTCCTCTAGTACAGCCCTC
TCCACCAGTAGCTAGAGCTGCCCCAGTATGTGAGACTGTACCAGTTCATCCACTCCCACAAGGTGAAGTT
CAGGGGCTGCCTCCACCCCCACCACCGCCTCCTCTGCCTCCACCTGGCATTCGACCATCATCACCTGTCA
CAGTTACAGCTCTTGCTCATCCTCCCTCTGGGCTACATCCAACTCCATCTACTGCCCCAGGTCCCCATGT
TCCATTAATGCCTCCATCTCCTCCATCACAAGTTATACCTGCTTCTGAGCCAAAGCGCCATCCATCAACC
CTACCTGTAATCAGTGATGCCAGGAGTGTGCTACTGGAAGCAATACGAAAAGGTATTCAGCTACGCAAAG
TAGAAGAGCAGCGTGAACAGGAAGCTAAGCATGAACGCATTGAAAACGATGTTGCCACCATCCTGTCTCG
CCGTATTGCTGTTGAATATAGTGATTCGGAAGATGATTCAGAATTTGATGAAGTAGATTGGTTGGAGTAA
GAAAAATGCATTGATAAATATTACAAAACTGAATGCAAATGTCCTTTGTGGTGCTTGTTCCTTGAAAATG
TTTGGTCA

Human WASF1 protein sequence - var1 (public gi: 4507913) (SEQ ID NO: 389)

MPLVKRNIDPRHLCHTALPRGIKNELECVTNISLANIIRQLSSLSKYAEDIFGELFNEAHSFSFRVNSLQ
ERVDRLSVSVTQLDPKEEELSLQDITMRKAFRSSTIQDQQLFDRKTLPIPLQETYDVCEQPPPLNILTPY
RDDGKEGLKFYTNPSYFFDLWKEKMLQDTEDKRKEKRKQKQKNLDRPHEPEKVPRAPHDRRREWQKLAQG
PELAEDDANLLHKHIEVANGPASHFETRPQTYVDHMDGSYSLSALPFSQMSELLTRAEERVLVRPHEPPP
PPPMHGAGDAKPIPTCISSATGLIENRPQSPATGRTPVFVSPTPPPPPPPLPSALSTSSLRASMTSTPPP
PVPPPPPPPATALQAPAVPPPPAPLQIAPGVLHPAPPPIAPPLVQPSPPVARAAPVCETVPVHPLPQGEV
QGLPPPPPPPPLPPPGIRPSSPVTVTALAHPPSGLHPTPSTAPGPHVPLMPPSPPSQVIPASEPKRHPST
LPVISDARSVLLEAIRKGIQLRKVEEQREQEAKHERIENDVATILSRRIAVEYSDSEDDSEFDEVDWLE

Figure 36 part - 151

Unigene Name: HIP-55 Unigene ID: Hs.183373

Human HIP-55 mRNA sequence - var1 (public gi: 6470260) (SEQ ID NO: 377)
ATGGCGGCGAACCTGAGCCGGAACGGGCCAGCGCTGCAAGAGGCCTACGTGCGGGTGGTCACCGAGAAGT
CCCCGACCGACTGGGCTCTCTTTACCTATGAAGGCAACAGCAATGACATCCGCGTGGCTGGCACAGGGGA
GGGTGGCCTGGAGGAGATGGTGGAGGAGCTCAACAGCGGGAAGGTGATGTACGCCTTCTGCAGAGTGAAG
GACCCCAACTCTGGACTGCCCAAATTTGTCCTCATCAACTGGACAGGCGAGGGCGTGAACGATGTGCGGA
AGGGAGCCTGTGCCAGCCACGTCAGCACCATGGCCAGCTTCCTGAAGGGGGCCCATGTGACCATCAACGC
ACGGGCCGAGGAGGATGTGGAGCCTGAGTGCATCATGGAGAAGGTGGCCAAGGCTTCAGGTGCCAACTAC
AGCTTTCACAAGGAGAGTGGCCGCTTCCAGGACGTGGGACCCCAGGCCCCAGTGGGCTCTGTGTACCAGA
AGACCAATGCCGTGTCTGAGATTAAAAGGGTTGGTAAAGACAGCTTCTGGGCCAAAGCAGAGAAGGAGGA
GGAGAACCGTCGGCTGGAGGAAAAGCGGCGGGCCGAGGAGGCACAGCGGCAGCTGGAGCAGGAGCGCCGG
GAGCGTGAGCTGCGTGAGGCTGCACGCCGGGAGCAGCGCTATCAGGAGCAGGGTGGCGAGGCCAGCCCCC
AGAGGACGTGGGAGCAGCAGCAAGAAGTGGTTTCAAGGAACCGAAATGAGCAGGAGTCTGCCGTGCACCC
GAGGGAGATTTTCAAGCAGAAGGAGAGGGCCATGTCCACCACCTCCATCTCCAGTCCTCAGCCTGGCAAG
CTGAGGAGCCCCTTCCTGCAGAAGCAGCTCACCCAACCAGAGACCCACTTTGGCAGAGAGCCAGCTGCTG
CCATCTCAAGGCCCAGGGCAGATCTCCCTGCTGAGGAGCCGGCGCCCAGCACTCCTCCATGTCTGGTGCA
GGCAGAAGAGGAGGCTGTGTATGAGGAACCTCCAGAGCAGGAGACCTTCTACGAGCAGCCCCCACTGGTG
CAGCAGCAAGGTGCCGGCTCTGAGCACATTGACCACCACATTCAGGGCCAGGGGCTCAGTGGGCAAGGGC
TCTGTGCCCCGTGCCCTGTACGACTACCAGGCAGCCGACGACACAGAGATCTCCTTTGACCCCGAGAACCT
CATCACGGGCATCGAGGTGATCGACGAAGGCTGGTGGCGTGGCTATGGGCCGGATGGCCATTTTGGCATG
TTCCCTGCCAACTACGTGGAGCTCATTGAGTGAGGCTGAGGGCGGCCGCTAGACTAGTCTAGAGAAAAAA
C

Human HIP-55 mRNA sequence - var2 (public gi: 8885629) (SEQ ID NO: 378)
GAAGCTACAGCAGCGGCGCGGAGACTGCGGGGCGGGCCATGGCGGCGAACCTGAGCCGGAACGGGCCAGC
GCTGCAAGAGGCCTACGTGCGGGTGGTCACCGAGAAGTCCCCGACCGACTGGGCTCTCTTTACCTATGAA
GGCAACAGCAATGACATCCGCGTGGCTGGCACAGGGGAGGGTGGCCTGGAGGAGATGGTGGAGGAGCTCA
ACAGCGGGAAGGTGATGTACGCCTTCTGCAGAGTGAAGGACCCCAACTCTGGACTGCCCAAATTTGTCCT
CATCAACTGGACAGGCGAGGGCGTGAACGATGTGCGGAAGGGAGCCTGTGCCAGCCACGTCAGCACCATG
GCCAGCTTCCTGAAGGGGGCCCATGTGACCATCAACGCACGGGCCGAGGAGGATGTGGAGCCTGAGTGCA
TCATGGAGAAGGTGGCCAAGGCTTCAGGTGCCAACTACAGCTTTCACAAGGAGAGTGGCCGCTTCCAGGA
CGTGGGACCCCAGGCCCCAGTGGGCTCTGTGTACCAGAAGACCAATGCCGTGTCTGAGATTAAAAGGGTT
GGTAAAGACAGCTTCTGGGCCAAAGCAGAGAAGGAGGAGGAGAACCGTCGGCTGGAGGAAAAGCGGCGGG
CCGAGGAGGCACAGCGGCAGCTGGAGCAGGAGCGCCGGGAGCGTGAGCTGCGTGAGGCTGCACGCCGGGA
GCAGCGCTATCAGGAGCAGGGTGGCGAGGCCAGCCCCCAGAGGACGTGGGAGCAGCAGCAAGAAGTGGTT
TCAAGGAACCGAAATGAGCAGGAGTCTGCCGTGCACCCGAGGGAGATTTTCAAGCAGAAGGAGAGGGCCA
TGTCCACCACCTCCATCTCCAGTCCTCAGCCTGGCAAGCTGAGGAGCCCCTTCCTGCAGAAGCAGCTCAC
CCAACCAGAGACCCACTTTGGCAGAGAGCCAGCTGCTGCCATCTCAAGGCCCAGGGCAGATCTCCCTGCT
GAGGAGCCGGCGCCCAGCACTCCTCCATGTCTGGTGCAGGCAGAAGAGGAGGCTGTGTATGAGGAACCTC
CAGAGCAGGAGACCTTCTACGAGCAGCCCCCACTGGTGCAGCAGCAAGGTGCTGGCTCTGAGCACATTGA
CCACCACATTCAGGGCCAGGGGCTCAGTGGGCAAGGGCTCTGTGCCCGTGCCCTGTACGACTACCAGGCA
GCCGACGACACAGAGATCTCCTTTGACCCCGAGAACCTCATCACGGGCATCGAGGTGATCGACGAAGGCT
GGTGGCGTGGCTATGGGCCGGATGGCCATTTTGGCATGTTCCCTGCCAACTACGTGGAGCTCATTGAGTG
AGGCTGAGGGCACATCTTGCCCTTCCCCTCTCAGACATGGCTTCCTTATTGCTGGAAGAGGAGGCCTGGG
AGTTGACATTCAGCACTCTTCCAGGAATAGGACCCCCAGTGAGGATGAGGCCTCAGGGCTCCCTCCGGCT
TGGCAGACTCAGCCTGTCACCCCAAATGCAGCAATGGCCTGGTGATTCCCACACATCCTTCCTGCATCCC
CCGACCCTCCCAGACAGCTTGGCTCTTGCCCCTGACAGGATACTGAGCCAAGCCCTGCCTGTGGCCAAGC
CCTGAGTGGCCACTGCCAAGCTGCGGGGAAGGGTCCTGAGCAGGGGCATCTGGGAGGCTCTGGCTGCCTT
CTGCATTTATTTGCCTTTTTTCTTTTTCTCTTGCTTCTAAGGGGTGGTGGCCACCACTGTTTAGAATGAC
CCTTGGGAACAGTGAACGTAGAGAATTGTTTTTAGCAGAGTTTGTGACCAAAGTCAGAGTGGATCATGGT
GGTTTGGCAGCAGGGAATTTGTCTTGTTGGAGCCTGCTCTGTGCTCCCCACTCCATTTCTCTGTCCCTCT
GCCTGGGCTATGGGAAGTGGGGATGCAGATGGCCAAGCTCCCACCCTGGGTATTCAAAAACGGCAGACAC
AACATGTTCCTCCACGCGGCTCAAAAAAAAAAAAAAAAAAA

Human HIP-55 mRNA sequence - var3 (public gi: 8917572) (SEQ ID NO: 379)
ATGGCGGCGAACCTGAGCCGGAACGGGCCAGCGCTGCAAGAGGCCTACGTGCGGGTGGTCACCGAGAAGT
CCCCGACCGACTGGGCTCTCTTTACCTATGAAGGCAACAGCAATGACATCCGCGTGGCTGGCACAGGGGA
GGGTGGCCTGGAGGAGATGGTGGAGGAGCTCAACAGCGGGAAGGTGATGTACGCCTTCTGCAGAGTGAAG
GACCCCAACTCTGGACTGCCCAAATTTGTTCTCATCAACTGGACAGGCGAGGGCGTGAACGATGTGCGGA

AGGGAGCCTGTTCCAGCCACGTCAGCACCATGGCCAGCTTCCTGAAGGGGGCCCATGTGACCATCAACGC
ACGGGCCGAGGAGGATGTGGAGCCTGAGTGCATCATGGAGAAGGTGGCCAAGGCTTCAGGTGCCAACTAC
AGCTTTCACAAGGAGAGTGGCCGCTTCCAGGACGTGGGACCCCAGGCCCCAGTGGGCTCTGTGTACCAGA
AGACCAATGCCGTGTCTGAGATTAAAAGGGTTGGTAAAGACAGCTTCTGGGCCAAAGCAGAGAAGGAGGA
GGAGAACCGTCGGCTGGAGGAAAAGCGGCGGGCCGAGGAGGCACAGCGGCAGCTGGAGCAGGAGCGCCGG
GAGCGTGAGCTGCGTGAGGCTGCACGCCGGGAGCAGCGCTATCAGGAGCAGGGTGGCGAGGCCAGCCCCC
AGAGTACGTGGGAGCAGCAGCAAGAAGTGGTTTCAAGGAACCGAAATGAGCAGGAGTCTGCCGTGCACCC
GAGGGAGATTTTCAAGCAGAAGGAGAGGGCCATGTCCACCACCTCCATCTCCAGTCCTCAGCCTGGCAAG
CTGAGGAGCCCCTTCCTGCAGAAGCAGCTCACCCAACCAGAGACCCACTTTGGCAGAGAGCCAGCTGCTG
CCATCTCAAGGCCCAGGGCAGATCTCCCTGCTGAGGAGCCGGCGCCCAGCACTCCTCCATGTCTGGTGCA
GGCAGAAGAGGAGGCTGTGTATGAGGAACCTCCAGAGCAGGAGACCTTCTACGAGCAGCCCCCACTGGTG
CAGCAGCAAGGTGCTGGCTCTGAGCACATTGACCACCACATTCAGGGCCAGGGGCTCAGTGGGCAAGGGC
TCTGTGCCCCGTGCCCTGTACGACTACCAGGCAGCCGACGACACAGAGATCTCCTTTGACCCCGAGAACCT
CATCACGGGCATCGAGGTGATCGACGAAGGCTGGTGGCGTGGCTATGGGCCGGATGGCCATTTTGGCATG
TTCCCTGCCAACTACGTGGAGCTCATTGAGTGA

Human HIP-55 mRNA sequence - var4 (public gi: 10121214) (SEQ ID NO: 380)

GGGGCGGGCCATGGCGGCGAACCTGAGCCGGAACGGGCCAGCGCTGCAAGAGGCCTACGTGCGGGTGGTC
ACCGAGAAGTCCCCGACCGACTGGGCTCTCTTTACCTATGAAGGCAACAGCAATGACATCCGCGTGGCTG
GCACAGGGGAGGGTGGCCTGGAGGAGATGGTGGAGGAGCTCAACAGCGGGAAGGTGATGTACGCCTTCTG
CAGAGTGAAGGACCCCAACTCTGGACTGCCCAAATTTGTTCTCATCAACTGGACAGGCGAGGGCGTGAAC
GATGTGCGGAAGGGAGCCTGTTCCAGCCACGTCAGCACCATGGCCAGCTTCCTGAAGGGGGCCCATGTGA
CCATCAACGCACGGGCCGAGGAGGATGTGGAGCCTGAGTGCATCATGGAGAAGGTGGCCAAGGCTTCAGG
TGCCAACTACAGCTTTCACAAGGAGAGTGGCCGCTTCCAGGACGTGGGACCCCAGGCCCCAGTGGGCTCT
GTGTACCAGAAGACCAATGCCGTGTCTGAGATTAAAAGGGTTGGTAAAGACAGCTTCTGGGCCAAAGCAG
AGAAGGAGGAGGAGAACCGTCGGCTGGAGGAAAAGCGGCGGGCCGAGGAGGCACAGCGGCAGCTGGAGCA
GGAGCGCCGGGAGCGTGAGCTGCGTGAGGCTGCACGCCGGGAGCAGCGCTATCAGGAGCAGGGTGGCGAG
GCCAGCCCCCAGAGTACGTGGGAGCAGCAGCAAGAAGTGGTTTCAAGGAACCGAAATGAGCAGGAGTCTG
CCGTGCACCCGAGGGAGATTTTCAAGCAGAAGGAGAGGGCCATGTCCACCACCTCCATCTCCAGTCCTCA
GCCTGGCAAGCTGAGGAGCCCCTTCCTGCAGAAGCAGCTCACCCAACCAGAGACCCACTTTGGCAGAGAG
CCAGCTGCTGCCATCTCAAGGCCCAGGGCAGATCTCCCTGCTGAGGAGCCGGCGCCCAGCACTCCTCCAT
GTCTGGTGCAGGCAGAAGAGGAGGCTGTGTATGAGGAACCTCCAGAGCAGGAGACCTTCTACGAGCAGCC
CCCACTGGTGCAGCAGCAAGGTGCTGGCTCTGAGCACATTGACCACCACATTCAGGGCCAGGGGCTCAGT
GGGCAAGGGCTCTGTGCCCGTGCCCTGTACGACTACCAGGCAGCCGACGACACAGAGATCTCCTTTGACC
CCGAGAACCTCATCACGGGCATCGAGGTGATCGACGAAGGCTGGTGGCGTGGCTATGGGCCGGATGGCCA
TTTTGGCATGTTCCCTGCCAACTACGTGGAGCTCATTGAGTGAGGCTGAGGGCACATCTTGCCCTTCCCC
TCTCAGACATGGCTTCCTTATTGCTGGAAGAGGAGGCCTGGGAGTTGACATTCAGCACTCTTCCAGGAAT
AGGACCCCCAGTGAGGATGAGGCCTCAGGGCTCCCTCCGGCTTGGCAGACTCAGCCTGTCACCCCAAATG
CAGCAATGGCCTGGTGATTCCCACACATCCTTCCTGCATCCCCCGACCCTCCCAGACAGCTTGGCTCTTG
CCCCTGACAGGATACTGAGCCAAGCCCTGCCTGTGGCCAAGCCCTGAGTGGCCACTGCCAAGCTGCGGGG
AAGGGTCCTGAGCAGGGGCATCTGGGAGGCTCTGGCTGCCTTCTGCATTTATTTGCCTTTTTTCTTTTTC
TCTTGCTTCTAAGGGGTGGTGGCCACCACTGTTTAGAATGACCCTTGGGAACAGTGAACGTAGAGAATTG
TTTTTAGCAGAGTTTGTGACCAAAGTCAGAGTGGATCATGGTGGTTTGGCAGCAGGGAATTTGTCTTGTT
GGAGCCTGCTCTGTGCTCCCCACTCCATTTCTCTGTCCCTCTGCCTGGGCTATGGGAAGTGGGGATGCAG
ATGGCCAAGCTCCCACCCTGGGTATTCAAAAACGGCAGACACAACATGTTCCTCCACGCGGCTCGCTCGA
TGCCTGCAGGCCCCAGTGTGTGCCTCAACTGATTCTGACTTCAGGAAAAGTAACACAGAGTGGCCTTGGC
CTGTTGTCTTCCCCTATTTTCTGTCCCAGCTCATCCGTGTCTCTGAAGAATAAATATGCTTTTGGAAAAA
AAAAAAAAAA

Human HIP-55 mRNA sequence - var5 (public gi: 10441969) (SEQ ID NO: 381)

GACCATCAACGCACGGGCCGAGGAGGATGTGGAGCCTGAGTGCATCATGGAGAAGGTGGCCAAGGCTTCA
GGTGCCAACTACAGCTTTCACAAGGAGAGTGGCCGCTTCCAGGACGTGGGACCCCAGGCCCCAGTGGGCT
CTGTGTACCAGAAGACCAATGCCGTGTCTGAGATTAAAAGGGTTGGTAAAGACAGCTTCTGGGCCAAAGC
AGAGAAGGAGGAGGAGAACCGTCGGCTGGAGGAAAAGCGGCGGGCCGAGGAGGCACAGCGGCAGCTGGAG
CAGGAGCGCCGGGAGCGTGAGCTGCGTGAGGCTGCACGCCGGGAGCAGCGCTATCAGGAGCAGGGTGGCG
AGGCCAGCCCCCAAAGGACGTGGGAGCAGCAGCAAGAAGTGGTTTCAAGGAACCGAAATGAGCAGGAGTC
TGCCGTGCACCCGAGGGAGATTTTCAAGCAGAAGGAGAGGGCCATGTCCACCACCTCCATCTCCAGTCCT
CAGCCTGGCAAGCTGAGGAGCCCCTTCCTGCAGAAGCAGCTCACCCAACCAGAGACCCACTTTGGCAGAG
AGCCAGCTGCTGCCATCTCAAGGCCCAGGGCAGATCTCCCTGCTGAGGAGCCGGCGCCCAGCACTCCTCC
ATGTCTGGTGCAGGCAGAAGAGGAGGCTGTGTATGAGGAACCTCCAGAGCAGGAGACCTTCTACGAGCAG
CCCCCACTGGTGCAGCAGCAAGGTGCTGGCTCTGAGCACATTGACCACCACATTCAGGGCCAGGGGCTCA
GTGGGCAAGGGCTCTGTGCCCGTGCCCTGTACGACTACCAGGCAGCCGACGACACAGAGATCTCCTTTGA

Figure 36 part - 153

CCCCGAGAACCTCATCACGGGCATCGAGGTGATCGACGAAGGCTGGTGGCGTGGCTATGGGCCGGATGGC
CATTTTGGCATGTTCCCTGCCAACTACGTGGAGCTCATTGAGTGAGGCTGAGGGCACATCTTGCCCTTCC
CCTCTCAGACATGGCTTCCTTATTGCTGGAAGAGGAGGCCTGGGAGTTGACATTCAGCACTCTTCCAGGA
ATAGGACCCCCAGTGAGGATGAGGCCTCAGGGCTCCCTCCGGCTTGGCAGACTCAGCCTGTCACCCCAAA
TGCAGCAATGGCCTGGTGATTCCCACACATCCTTCCTGCATCCCCCGACCCTCCCAGACAGCTTGGCTCT
TGCCCCTGACAGGATACTGAGCCAAGCCCTGCCTGTGGCCAAGCCCTGAGTGGCCACTGCCAAGCTGCGG
GGAAGGGTCCTGAGCAGGGGCATCTGGGAGGCTCTGGCTGCCTTCTGCATTTATTTGCCTTTTTTCTTTT
TCTCTTGCTTCTAAGGGGTGGTGGCCACCACTGTTTAGAATGACCCTTGGGAACAGTGAACGTAGAGAAT
TGTTTTTAGCAGAGTTTGTGACCAAAGTCAGAGTGGATCATGGTGGTTTGGCAGCAGGGAATTTGTCTTG
TTGGAGCCTGCTCTGTGCTCCCCACTCCATTTCTCTGTCCCTCTGCCTGGGCTATGGGAAGTGGGGATGC
AGATGGCCAAGCTCCCACCCTGGGTATTCAAAAACGGCAGACACAACATGTTCCTCCACGCGGCTCACTC
GATGCCTGCAGGCCCCAGTGTGTGCCTCAACTGATTCTGACTTCAGGAAAAGTAACACAGAGTGGCCTTG
GCCTGTTGTCTTCCCCTATTTTCTGTCCCAGCTCATCCGTGTCTCTGAAGAACAAATATGCTTTTGGACC
ACGAAAAAAAAAAAAAAAAAAAA

Human HIP-55 mRNA sequence - var6 (public gi: 14041995) (SEQ ID NO: 382)

AGCGGCGCGGAGACTGCGGGGCGGGCCATGGCGGCGAACCTGAGCCGGAACGGGCCAGCGCTGCAAGAGG
CCTACGTGCGGGTGGTCACCGAGAAGTCCCCGACCGACTGGGCTCTCTTTACCTATGAAGGCAACAGCAA
TGACATCCGCGTGGCTGGCACAGGGGAGGGTGGCCTGGAGGAGATGGTGGAGGAGCTCAACAGCGGGAAG
GTGATGTACGCCTTCTGCAGAGTGAAGGACCCCAACTCTGGACTGCCCAAATTTGTCCTCATCAACTGGA
CAGGCGAGGGCGTGAACGATGTGCGGAAGGGAGCCTGTGCCAGCCACGTCAGCACCATGGCCAGCTTCCT
GAAGGGGGCCCATGTGACCATCAACGCACGGGCCGAGGAGGATGTGGAGCCTGAGTGCATCATGGAGAAG
GTGGCCAAGGCTTCAGGTGCCAACTACAGCTTCCACAAGGAGAGTGGCCGCTTCCAGGACGTGGGACCCC
AGGCCCCAGTGGGCTCTGTGTACCAGAAGACCAATGCCGTGTCTGAGATTAAAAGGGTTGGTAAAGACAG
CTTCTGGGCCAAAGCAGAGAAGGAGGAGGAGAACCGTCGGCTGGAGGAAAAGCGGCGGGCCGAGGAGGCA
CAGCGGCAGCTGGAGCAGGAGCGCCGGGAGCGTGAGCTGCGTGAGGCTGCACGCCGGGAGCAGCGCTATC
AGGAGCAGGGTGGCGAGGCCAGCCCCCAGAGCAGGACGTGGGAGCAGCAGCAAGAAGTGGTTTCAAGGAA
CCGAAATGAGCAGGGGTCAACATGTGCTTCCCTCCAGGAGTCTGCCGTGCACCCGAGGGAGATTTTCAAG
CAGAAGGAGAGGGCCATGTCCACCACCTCCATCTCCAGTCCTCAGCCTGGCAAGCTGAGGAGCCCCTTCC
TGCAGAAGCAGCTCACCCAACCAGAGACCCACTTTGGCAGAGAGCCAGCTGCTGCCATCTCAAGGCCCAG
GGCAGATCTCCCTGCTGAGGAGCCGGCGCCCAGCACTCCTCCATGTCTGGTGCAGGCAGAAGAGGAGGCT
GTGTATGAGGAACCTCCAGAGCAGGAGACCTTCTACGAGCAGCCCCCACTGGTGCAGCAGCAAGGTGCTG
GCTCTGAGCACATTGACCACCACATCCAGGGCCAGGGGCTCAGTGGGCAAGGGCTCTGTGCCCGTGCCCT
GTACGACTACCAGGCAGCCGACGACACAGAGATCTCCTTTGACCCCGAGAACCTCATCACGGGCATCGAG
GTGATCGACGAAGGCTGGTGGCGTGGCTATGGGCCGGATGGCCATTTTGGCATGTTCCCTGCCAACTACG
TGGAGCTCATTGAGTGAGGCTGAGGGCACATCTTGCCCTTCCCCTCTCAGACATGGCTTCCTTATTGCTG
GAAGAGGAGGCCTGGGAGTTGACATTCAGCACTCTTCCAGGAATAGGACCCCCAGTGAGGATGAGGCCTC
AGGGCTCCCTCCGGCTTGGCAGACTCAGCCTGTCACCCCAAATGCAGCAATGGCCTGGTGATTCCCACAC
ATCCTTCCTGCATCCCCCGACCCTCCCAGACAGCTTGGCTCTTGCCCCTGACAGGATACTGAGCCAAGCC
CTGCCTGTGGCCAAGCCCTGAGTGGCCACTGCCAAGCTGCGGGGAAGGGTCCTGAGCAGGGGCATCTGGG
AGGCTCTGGCTGCCTTCTGCATTTATTTGCCTTTTTTCTTTTTCTCTTGCTTCTAAGGGGTGGTGGCCAC
CACTGTTTAGAATGACCCTTGGGAACAGTGAACGTAGAGAATTGTTTTTAGCAGAGTTTGTGACCAAAGT
CAGAGTGGATCATGGTGGTTTGGCAGCAGGGAATTTGTCTTGTTGGAGCCTGCTCTGTGCTCCCCACTCC
ATTTCTCTGTCCCTCTGCCTGGGCTATGGGAAGTGGGGATGCAGATGGCCAAGCTCCCACCCTGGGTATT
CAAAAACGGCAGACACAACATGTTCCTCCACGCGGCTCACTCGATGCCTGCAGGCCCCAGTGTGTGCCTC
AACCGATTCTGACTTCAGGAAAAGTAACACAGAGTGGC

Human HIP-55 mRNA sequence - var7 (public gi: 15079722) (SEQ ID NO: 383)

GGCACGAGGGCGGAGACTGCGGGGCGGGCCATGGCGGCGAACCTGAGCCGGAACGGGCCAGCGCTGCAAG
AGGCCTACGTGCGGGTGGTCACCGAGAAGTCCCCGACCGACTGGGCTCTCTTTACCTATGAAGGCAACAG
CAATGACATCCGCGTGGCTGGCACAGGGGAGGGTGGCCTGGAGGAGATGGTGGAGGAGCTCAACAGCGGG
AAGGTGATGTACGCCTTCTGCAGAGTGAAGGACCCCAACTCTGGACTGCCCAAATTTGTCCTCATCAACT
GGACAGGCGAGGGCGTGAACGATGTGCGGAAGGGAGCCTGTGCCAGCCACGTCAGCACCATGGCCAGCTT
CCTGAAGGGGGCCCATGTGACCATCAACGCACGGGCCGAGGAGGATGTGGAGCCTGAGTGCATCATGGAG
AAGGTGGCCAAGGCTTCAGGTGCCAACTACAGCTTTCACAAGGAGAGTGGCCGCTTCCAGGACGTGGGAC
CCCAGGCCCCAGTGGGCTCTGTGTACCAGAAGACCAATGCCGTGTCTGAGATTAAAAGGGTTGGTAAAGA
CAGCTTCTGGGCCAAAGCAGAGAAGGAGGAGGAGAACCGTCGGCTGGAGGAAAAGCGGCGGGCCGAGGAG
GCACAGCGGCAGCTGGAGCAGGAGCGCCGGGAGCGTGAGCTGCGTGAGGCTGCACGCCGGGAGCAGCGCT
ATCAGGAGCAGGGTGGCGAGGCCAGCCCCCAGAGCAGGACGTGGGAGCAGCAGCAAGAAGTGGTTTCAAG
GAACCGAAATGAGCAGGAGTCTGCCGTGCACCCGAGGGAGATTTTCAAGCAGAAGGAGAGGGCCATGTCC
ACCACCTCCATCTCCAGTCCTCAGCCTGGCAAGCTGAGGAGCCCCTTCCTGCAGAAGCAGCTCACCCAAC
CAGAGACCCACTTTGGCAGAGAGCCAGCTGCTGCCATCTCAAGGCCCAGGGCAGATCTCCCTGCTGAGGA

Figure 36 part - 154

GCCGGCGCCCAGCACTCCTCCATGTCTGGTGCAGGCAGAAGAGGAGGCTGTGTATGAGGAACCTCCAGAG
CAGGAGACCTTCTACGAGCAGCCCCCACTGGTGCAGCAGCAAGGTGCTGGCTCTGAGCACATTGACCACC
ACATTCAGGGCCAGGGGCTCAGTGGGCAAGGGCTCTGTGCCCGTGCCCTGTACGACTACCAGGCAGCCGA
CGACACAGAGATCTCCTTTGACCCCGAGAACCTCATCACGGGCATCGAGGTGATCGACGAAGGCTGGTGG
CGTGGCTATGGGCCGGATGGCCATTTTGGCATGTTCCCTGCCAACTACGTGGAGCTCATTGAGTGAGGCT
GAGGGCACATCTTGCCCTTCCCCTCTCAGACATGGCTTCCTTATTGCTGGAAGAGGAGGCCTGGGAGTTG
ACATTCAGCACTCTTCCAGGAATAGGACCCCCAGTGAGGATGAGGCCTCAGGGCTCCCTCCGGCTTGGCA
GACTCAGCCTGTCACCCCAAATGCAGCAATGGCCTGGTGATTCCCACACATCCTTCCTGCATCCCCCGAC
CCTCCCAGACAGCTTGGCTCTTGCCCCTGACAGGATACTGAGCCAAGCCCTGCCTGTGGCCAAGCCCTGA
GTGGCCACTGCCAAGCTGCGGGGAAGGGTCCTGAGCAGGGGCATCTGGGAGGCTCTGGCTGCCTTCTGCA
TTTATTTGCCTTTTTTCTTTTTCTCTTGCTTCTAAGGGGTGGTGGCCACCACTGTTTAGAATGACCCTTG
GGAACAGTGAACGTAGAGAATTGTTTTTAGCAGAGTTTGTGACCAAAGTCAGAGTGGATCATGGTGGTTT
GGCAGCAGGGAATTTGTCTTGTTGGAGCCTGCTCTGTGCTCCCCACTCCATTTCTCTGTCCCTCTGCCTG
GGCTATGGGAAGTGGGGATGCAGATGGCCAAGCTCCCACCCTGGGTATTCAAAAACGGCAGACACAACAT
GTTCCTCCACGCGGCTCACTCGATGCCTGCAGGCCCCAGTGTGTGCCTCAACTGATTCTGACTTCAGGAA
AAGTAACACAGAGTGGCCTTGGCCTGTTGTCTTCCCCTATTTTCTGTCCCAGCTCATCCGTGTCTCTGAA
GAACAAATATGCTTTTGGACCACGAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

Human HIP-55 mRNA sequence - var8 (public gi: 21619482) (SEQ ID NO: 384)

CGGGCCATGGCGGCGAACCTGAGCCGGAACGGGCCAGCGCTGCAAGAGGCCTACGTGCGGGTGGTCACCG
AGAAGTCCCCGACCGACTGGGCTCTCTTTACCTATGAAGGCAACAGCAATGACATCCGCGTGGCTGGCAC
AGGGGAGGGTGGCCTGGAGGAGATGGTGGAGGAGCTCAACAGCGGGAAGGTGATGTACGCCTTCTGCAGA
GTGAAGGACCCCAACTCTGGACTGCCCAAATTTGTCCTCATCAACTGGACAGGCGAGGGCGTGAACGATG
TGCGGAAGGGAGCCTGTGCCAGCCACGTCAGCACCATGGCCAGCTTCCTGAAGGGGGCCCATGTGACCAT
CAACGCACGGGCCGAGGAGGATGTGGAGCCTGAGTGCATCATGGAGAAGGTGGCCAAGGCTTCAGGTGCC
AACTACAGCTTTCACAAGGAGAGTGGCCGCTTCCAGGACGTGGGACCCCAGGCCCCAGTGGGCTCTGTGT
ACCAGAAGACCAATGCCGTGTCTGAGATTAAAAGGGTTGGTAAAGACAGCTTCTGGGCCAAAGCAGAGAA
GGAGGAGGAGAACCGTCGGCTGGAGGAAAAGCGGCGGGCCGAGGAGGCACAGCGGCAGCTGGAGCAGGAG
CGCCGGGAGCGTGAGCTGCGTGAGGCTGCACGCCGGGAGCAGCGCTATCAGGAGCAGGGTGGCGAGGCCA
GCCCCCAGAGGACGTGGGAGCAGCAGCAAGAAGTGGTTTCAAGGAACCGAAATGAGCAGGAGTCTGCCGT
GCACCCGAGGGAGATTTTCAAGCAGAAGGAGAGGGCCATGTCCACCACCTCCATCTCCAGTCCTCAGCCT
GGCAAGCTGAGGAGCCCCTTCCTGCAGAAGCAGCTCACCCAACCAGAGACCCACTTTGGCAGAGAGCCAG
CTGCTGCCATCTCAAGGCCCAGGGCAGATCTCCCTGCTGAGGAGCCGGCGCCCAGCACTCCTCCATGTCT
GGTGCAGGCAGAAGAGGAGGCTGTGTATGAGGAACCTCCAGAGCAGGAGACCTTCTACGAGCAGCCCCCA
CTGGTGCAGCAGCAAGGTGCTGGCTCTGAGCACATTGACCACCACATTCAGGGCCAGGGGCTCAGTGGGC
AAGGGCTCTGTGCCCGTGCCCTGTACGACTACCAGGCAGCCGACGACACAGAGATCTCCTTTGACCCCGA
GAACCTCATCACGGGCATCGAGGTGATCGACGAAGGCTGGTGGCGTGGCTATGGGCCGGATGGCCATTTT
GGCATGTTCCCTGCCAACTACGTGGAGCTCATTGAGTGAGGCTGAGGGCACATCTTGCCCTTCCCCTCTC
AGACATGGCTTCCTTATTGCTGGAAGAGGAGGCCTGGGAGTTGACATTCAGCACTCTTCCAGGAATAGGA
CCCCCAGTGAGGATGAGGCCTCAGGGCTCCCTCCGGCTTGGCAGACTCAGCCTGTCACCCCAAATGCAGC
AATGGCCTGGTGATTCCCACACATCCTTCCTGCATCCCCCGACCCTCCCAGACAGCTTGGCTCTTGCCCC
TGACAGGATACTGAGCCAAGCCCTGCCTGTGGCCAAGCCCTGAGTGGCCACTGCCAAGCTGCGGGGAAGG
GTCCTGAGCAGGGGCATTTGGGAGGCTCTGGCTGCCTTCTGCATTTATTTGCCTTTTTTCTTTTTCTCTT
GCTTCTAAGGGGTGGTGGCCACCACTGTTTAGAATGACCCTTGGGAACAGTGAACGTAGAGAATTGTTTT
TAGCAGAGTTTGTGACCAAAGTCAGAGTGGATCATGGTGGTTTGGCAGCAGGGAATTTGTCTTGTTGGAG
CCTGCTCTGTGCTCCCCACTCCATTTTTCTGTCCCTCTGCCTGGGCTGTGGGAAGTGGGGATGCAGATGG
CCAAGCTCCCCCCCTGGGTATTCAAAAACGGCAGACACAACATGTTCCTCCACGCGGCTCACTCGATGCC
TGCAGGCCCCAGTGTGTGCCTCAACTGATTCTGACTTCAGGAAAAGTAACACAGAGTGGCCTTGGCCTGT
TGTCTTCCCCTAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

Human HIP-55 mRNA sequence - var9 (public gi: 23959038) (SEQ ID NO: 385)

GGCACGAGGATTTGACACATGAATGTATAGCAGTCATTGGGAAACTCCACAGCTCATGTTTTCCTCATAG
TAGATGTGTGCTCCCATCTCCATGGCTTTGTCCCTCACAACCCCCACCCCATGGTAAGTCAGGCCAGTGT
CCTCCCAGCTGCAGAGCTGAGAAGGCTGCACAGTTGCCTACTGAGAACCTGCCTAGTGGGTCAGAGCAAA
GTGAGAACGGGCCTGTGCCCACCCACAGTGTTACTGTCAGCCCAAGCTCTTTGGGATGTAGTGGAAAGTC
ATGGTGGATACGGTGAGGAGAGATGGAACCCAAGGTGCTGGCTACAGAGCTCACTTGTGTTTCGTTTCAG
GGCTCTCTTTACCTATGAAGGCAACAGCAATGACATCCGCGTGGCTGGCACAGGGGGTGAGTATGACTCC
AAATGGACTCAGGGACACCAGGAGGTAGGAGGGTGACGACGAGGGGTCAGCGCACTCAGCTGTCTTGGTC
CACTGAGCCACATGGGGCTTCCAGTGCTCACTGGCCACTTCTGGCAGGCCTTAGGTTTCAGATATGTGTA
AGTGAAAACATTCCTCCTTGGTTCTCCTTCCCTCTGGGTGCAGGGGAGTGCTTTCTCTTTGTCTACTTGG
GGAGAGCTGAGAGGGAAACAGGCCTCTCCAGCTTGTGGGCAGCCTGCGTTGGGAGCTGCGGTGGGAAGCT
CACCAGTCCCAGAACTGGTGCTGGTGGAAAGAAAGTCCACAGACATATCTTCTTCTCCCTTTGTCCTGCC

Figure 36 part - 155

CTGGTCTTGTGCCGAGTGCTTGCAGGGGCCCCATCCTCACTGGGAGAGGCAGTATCACTGCAGATAGTCA
CGGGGGAGGCTCTGGAGGTCTCTACAGGAAGGACAGGCTCTTGGCCAGCACAGAGCAGAGGTTGTCAGGG
TAGGCTTCGTCAGAGTGTGACCTGTGGGCCCCTCAGCTGACACCCGTGACTGCTCCTCCTCCAGAAGTTG
CCTGACCCCTCCCTCTGTCCTGAGCTGGACATGGCTTCATTGTTCAATGAACACTCGGAGTGGTTCTCCA
CGGTTTGATGTCTGTTGTTGGTAGAAAGCCCCTTCCTTTCACAATCTTTCTGGGAGGTGTCCCCTTTCTA
GAAGGATTGCCATTGAACAGTAGACATGTGGTGTGGCAGGTGACTGGGAGTTGCAGAGATCAACAACTTG
AGAGTTTCCTGTCATCCCCAGTGGCACAGGACAGGGCTCTGCCACAAATGCAACAATTTGCTGTCCCCAG
AGTGGGGCTCATGACTGCCTCCACTCATACGGAGCCCTGTAGATGAAATACCTGATCAGCTCTTCCTCCT
TATAACCTGGAAAAGTTTGTGAGGGCTAAGCCTCAGTGTCAGGGAGAATTGTTTAGAGCTGCCCACTCCT
GTGCTCCCCCTGTCCCCATCACCCTCTCTTCTGGAGTCTGAGGACTGAGCCAGTTACGCCACTGCAGGAT
GTTCAATCTGGTCTGGCCGTCTGGGTGGCCCTGGAACTTGAGCAGACACAGGTGCAGGCAGTGGTGACTC
TACAGGCCCTGCTATTCCGGGCCCTTTTGCAACGTTGTGGCAACAATAAAATTTTGACGTAGCCATCCTC
CATTTGGAAGTCTGGTGGCTGGTTTGCCGTGGAAATGACCCTGTTTTTATTTCCAGAATTACCTCTGGGT
TTAGAGAAGTGGTTTTTAAACGAGTGTGGGTAAAAAAATTACCTGAGGTACTTGTCAGAATCGCAGACTT
CTAGGTCCCACCCAGCTCTCATCAATCAGTTTAGTGAGGGTGGTGCCCAGGACTCTGATTTTAAACATAC
CCCTAGAAAGATTCTGATACAGGTAGAGGTGAGAAGCCCTGGTTTAGAAGCAGCTCGGCCTCCCTTCATG
GTGGGACCAGGGCCAGCAGGGAATGTCAGGGCCACCCCTGACCTTCACTGTGACTCTGCTGCAGAGGGTG
GCCTGGAGGAGATGGTGGAGGAGCTCAACAGCGGGAAGGTGATGTACGCCTTCTGCAGAGTGAAGGACCC
CAACTCTGGACTGCCCAAATTTGTCCTCATCAACTGGACAGGCGAGGGCGTGAACGATGTGCGGAAGGGA
GCCTGTGCCAGCCACGTCAGCACCATGGCCAGCTTCCTGAAGGGGGCCCATGTGACCATCAACGCACGGG
CCGAGGAGGATGTGGAGCCTGAGTGCATCATGGAGAAGGTGGCCAAGGCTTCAGGTGCCAACTACAGCTT
TCACAAGGAGAGTGGCCGCTTCCAGGACGTGGGACCCCAGGCCCCAGTGGGCTCTGTGTACCAGAAGACC
AATGCCGTGTCTGAGATTAAAAGGGTTGGTAAAGACAGCTTCTGGGCCAAAGCAGAGGTGAGTGCTGCCC
CGGGGCATGCTGGGCACGTGGGAGTGTTCTGCTTGCTGTGGCTCATCTTTCCTCACAAGTGAGCTCATGC
AGCATCCACTCTCCTTGGTGCCCATTACAGATGGTCACACTGAGGCTCGGGTAAGTTAAGCCACAAGGCT
AATGATCGACTGGCTCTGGTGCCCGTCTTTGGCCATGTGCCTAAAACTCAGTCCTGGGCAGGGGATTAGG
CTGAAGTGGCAGCATAGGGCTGAGCGGGCAGTGGCTCTCCCTGCAGAAGGAGGAGGAGAACCGTCGGCTG
GAGGAAAAGCGGCGGGCCGAGGAGGCACAGCGGCAGCTGGAGCAGGAGCGCCGGGAGCGTGAGCTGCGTG
AGGCTGCACGCCGGGAGCAGCGCTATCAGGAGCAGGGTGGCGAGGCCAGCCCCCAGAGGACGTGGGAGCA
GCAGCAAGAAGTGGTTTCAAGGAACCGAAATGAGCAGGAGTCTGCCGTGCACCCGAGGGAGATTTTCAAG
CAGAAGGAGAGGGCCATGTCCACCACCTCCATCTCCAGTCCTCAGCCTGGCAAGCTGAGGAGCCCCTTCC
TGCAGAAGCAGCTCACCCAACCAGAGACCCACTTTGGCAGAGAGCCAGCTGCTGCCATCTCAAGGCCCAG
GGCAGATCTCCCTGCTGAGGAGCCGGCGCCCAGCACTCCTCCATGTCTGGTGCAGGCAGAAGAGGAGGCT
GTGTATGAGGAACCTCCAGAGCAGGAGACCTTCTACGAGCAGCCCCCACTGGTGCAGCAGCAAGGTGCTG
GCTCTGAGCACATTGACCACCACATTCAGGGCCAGGGGCTCAGTGGGCAAGGGCTCTGTGCCCGTGCCCT
GTACGACTACCAGGCAGCCGACGACACAGAGATCTCCTTTGACCCCGAGAACCTCATCACGGGCATCGAG
GTGATCGACGAAGGCTGGTGGCGTGGCTATGGGCCGGATGGCCATTTTGGCATGTTCCCTGCCAACTACG
TGGAGCTCATTGAGTGAGGCTGAGGGCACATCTTGCCCTTCCCCTCTCAGACATGGCTTCCTTATTGCTG
GAAGAGGAGGCCTGGGAGTTGACATTCAGCACTCTTCCAGGAATAGGACCCCCAGTGAGGATGAGGCCTC
AGGGCTCCCTCCGGCTTGGCAGACTCAGCCTGTCACCCCAAATGCAGCAATGGCCTGGTGATTCCCACAC
ATCCTTCCTGCATCCCCCGACCCTCCCAGACAGCTTGGCTCTTGCCCCTGACAGGATACTGAGCCAAGCC
CTGCCTGTGGCCAAGCCCTGAGTGGCCACTGCCAAGCTGCGGGGAAGGGTCCTGAGCAGGGGCATCTGGG
AGGCTCTGGCTGCCTTCTGCATTTATTTGCCTTTTTTCTTTTTCTCTTGCTTCTAAGGGGTGGTGGCCAC
CACTGTTTAGAATGACCCTTGGGAACAGTGAACGTAGAGAATTGTTTTTAGCAGAGTTTGTGACCAAAGT
CAGAGTGGATCATGGTGGTTTGGCAGCAGGGAATTTGTCTTGTTGGAGCCTGCTCTGTGCTCCCCACTCC
ATTTCTCTGTCCCTCTGCCTGGGCTATGGGAAGTGGGGATGCAGATGGCCAAGCTCCCACCCTGGGTATT
CAAAAACGGCAGACACAACATGTTCCTCCACGCGGCTCACTCGATGCCTGCAGGCCCCAGTGTGTGCCTC
AACTGATTCTGACTTCAGGAAAAGTAACACAGAGTGGCAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAA

Human HIP-55 protein sequence - var1 (public gi: 21619483) (SEQ ID NO: 390)

MAANLSRNGPALQEAYVRVVTEKSPTDWALFTYEGNSNDIRVAGTGEGGLEEMVEELNSGKVMYAFCRVK
DPNSGLPKFVLINWTGEGVNDVRKGACASHVSTMASFLKGAHVTINARAEEDVEPECIMEKVAKASGANY
SFHKESGRFQDVGPQAPVGSVYQKTNAVSEIKRVGKDSFWAKAEKEEENRRLEEKRRAEEAQRQLEQERR
ERELREAARREQRYQEQGGEASPQRTWEQQQEVVSRNRNEQESAVHPREIFKQKERAMSTTSISSPQPGK
LRSPFLQKQLTQPETHFGREPAAAISRPRADLPAEEPAPSTPPCLVQAEEEAVYEEPPEQETFYEQPPLV
QQQGAGSEHIDHHIQGQGLSGQGLCARALYDYQAADDTEISFDPENLITGIEVIDEGWWRGYGPDGHFGM
FPANYVELIE

Human HIP-55 protein sequence - var2 (public gi: 15079723) (SEQ ID NO: 391)

MAANLSRNGPALQEAYVRVVTEKSPTDWALFTYEGNSNDIRVAGTGEGGLEEMVEELNSGKVMYAFCRVK
DPNSGLPKFVLINWTGEGVNDVRKGACASHVSTMASFLKGAHVTINARAEEDVEPECIMEKVAKASGANY

Figure 36 part - 156

SFHKESGRFQDVGPQAPVGSVYQKTNAVSEIKRVGKDSFWAKAEKEEENRRLEEKRRAEEAQRQLEQERR
ERELREAARREQRYQEQGGEASPQSRTWEQQQEVVSRNRNEQESAVHPREIFKQKERAMSTTSISSPQPG
KLRSPFLQKQLTQPETHFGREPAAAISRPRADLPAEEPAPSTPPCLVQAEEEAVYEEPPEQETFYEQPPL
VQQQGAGSEHIDHHIQGQGLSGQGLCARALYDYQAADDTEISFDPENLITGIEVIDEGWWRGYGPDGHFG
MFPANYVELIE

Human HIP-55 protein sequence - var3 (public gi: 14041996) (SEQ ID NO: 392)
MAANLSRNGPALQEAYVRVVTEKSPTDWALFTYEGNSNDIRVAGTGEGGLEEMVEELNSGKVMYAFCRVK
DPNSGLPKFVLINWTGEGVNDVRKGACASHVSTMASFLKGAHVTINARAEEDVEPECIMEKVAKASGANY
SFHKESGRFQDVGPQAPVGSVYQKTNAVSEIKRVGKDSFWAKAEKEEENRRLEEKRRAEEAQRQLEQERR
ERELREAARREQRYQEQGGEASPQSRTWEQQQEVVSRNRNEQGSTCASLQESAVHPREIFKQKERAMSTT
SISSPQPGKLRSPFLQKQLTQPETHFGREPAAAISRPRADLPAEEPAPSTPPCLVQAEEEAVYEEPPEQE
TFYEQPPLVQQQGAGSEHIDHHIQGQGLSGQGLCARALYDYQAADDTEISFDPENLITGIEVIDEGWWRG
YGPDGHFGMFPANYVELIE

Human HIP-55 protein sequence - var4 (public gi: 10441970) (SEQ ID NO: 393)
MEKVAKASGANYSFHKESGRFQDVGPQAPVGSVYQKTNAVSEIKRVGKDSFWAKAEKEEENRRLEEKRRA
EEAQRQLEQERRERELREAARREQRYQEQGGEASPQRTWEQQQEVVSRNRNEQESAVHPREIFKQKERAM
STTSISSPQPGKLRSPFLQKQLTQPETHFGREPAAAISRPRADLPAEEPAPSTPPCLVQAEEEAVYEEPP
EQETFYEQPPLVQQQGAGSEHIDHHIQGQGLSGQGLCARALYDYQAADDTEISFDPENLITGIEVIDEGW
WRGYGPDGHFGMFPANYVELIE

Human HIP-55 protein sequence - var5 (public gi: 10121215) (SEQ ID NO: 394)
MAANLSRNGPALQEAYVRVVTEKSPTDWALFTYEGNSNDIRVAGTGEGGLEEMVEELNSGKVMYAFCRVK
DPNSGLPKFVLINWTGEGVNDVRKGACSSHVSTMASFLKGAHVTINARAEEDVEPECIMEKVAKASGANY
SFHKESGRFQDVGPQAPVGSVYQKTNAVSEIKRVGKDSFWAKAEKEEENRRLEEKRRAEEAQRQLEQERR
ERELREAARREQRYQEQGGEASPQSTWEQQQEVVSRNRNEQESAVHPREIFKQKERAMSTTSISSPQPGK
LRSPFLQKQLTQPETHFGREPAAAISRPRADLPAEEPAPSTPPCLVQAEEEAVYEEPPEQETFYEQPPLV
QQQGAGSEHIDHHIQGQGLSGQGLCARALYDYQAADDTEISFDPENLITGIEVIDEGWWRGYGPDGHFGM
FPANYVELIE

Figure 36 part - 157